### HAMILTON HEIGHTS BLOCK 13, LOTS A-D, AP TWENTY-LOT MAJOR SUBDIVISION

## STAFF REPORT FOR BOARD OF COUNTY COMMISSIONERS

CASE PLANNER:

Jennifer De Groot

REVIEWED/

APPROVED BY:

Renee Van Hoven W

PUBLIC HEARINGS/

**MEETINGS:** 

**BCC** Public Hearing:

9:00 a.m. September 13, 2007

Deadline for BCC action (60-working days):

October 23, 2007

**SUBDIVIDERS:** 

Marlin and Joshua Powell

PO Box 123

Corvallis, MT 59828

REPRESENTATIVE:

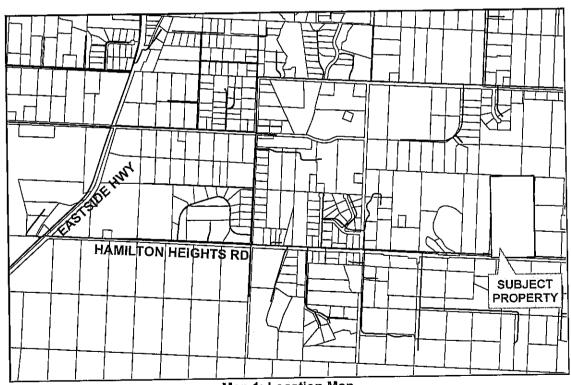
Shepherd Surveying

320 Adirondac

Hamilton, MT 59840

LOCATION OF REQUEST: The property is located southeast of Corvallis off Hamilton Heights

Road (See Map 1)



Map 1: Location Map

(Source Data: Ravalli County GIS Department)

### LEGAL DESCRIPTION OF PROPERTY:

A portion of the NE 1/4 Section 15, T6N, R20W, P.M.M., Ravalli

County, Montana.

### APPLICATION INFORMATION:

The subdivision application was determined complete on July 27, 2007. Agencies were notified of the subdivision and comments received by the Planning Department not included in the application

packet are Exhibits A-1 and A-7 of the staff report.

#### I FGAL NOTIFICATION:

A legal advertisement was published in the Ravalli Republic on Friday, August 17, 2007. Notice of the project was posted on the property and adjacent property owners were notified by certified mail postmarked August 3, 2007. One public comment has been received and is attached as Exhibit B-1.

### PLANNING BOARD REVIEW:

On May 30, 2007, the Planning Board Subdivision Screening Committee determined that full Planning Board Review is not necessary (Exhibit B-2, Subdivision Screening Committee Minutes dated May 30, 2007). The applicant requested that the full Planning Board review the subdivision proposal and provide a

recommendation to the BCC. At the August 15, 2007, Planning Board meeting, the Planning Board did not have time to review this subdivision and offered to reschedule the review for the next

meeting. The applicant then requested that the subdivision proposal be brought directly to the BCC, bypassing full Planning Board review.

### **APPLICABLE REGULATIONS:**

The proposal is being reviewed under the Ravalli County Subdivision

Regulations (RCSR), as amended May 24, 2007.

#### DEVELOPMENT PATTERN:

Vacant Rural Subject property Agricultural Rural North Residential Rural South Residential Rural East Vacant Rural West

#### INTRODUCTION

The Hamilton Heights, Block 13, Lots A-D, AP major subdivision is a 20-lot subdivision of 42.24 acres located approximately 4.5 miles southeast of the community of Corvallis. There is an area of steep slopes (greater than 25%) on the southern end of the subject property. An unnamed creek traverses the northern section of the parcel and the applicant has proposed a 100-foot wide nobuild/alteration zone along the creek.

The property is accessed via Eastside Highway, Hamilton Heights Road, and an internal subdivision loop road. Existing water rights with the property are distributed by the Bitter Root Irrigation District and are proposed to be split between each lot. No variances are being requested with this subdivision.

### RAVALLI COUNTY BOARD OF COUNTY COMMISSIONERS SEPTEMBER 13, 2007

# HAMILTON HEIGHTS, BLOCK 13, LOTS A-D, AP SUBDIVISION TWENTY-LOT MAJOR SUBDIVISION

### **RECOMMENDED MOTION**

That the Hamilton Heights, Block 13, Lots A-D, AP Major Subdivision be **approved**, based on the findings of fact and conclusions of law in the staff report, and subject to the conditions in the staff report. (Staff Note: The BCC should determine if cash-in-lieu will be accepted to meet the parkland dedication requirement as part of the motion. Also, the contribution to the Sheriff's Office needs to be negotiated with the applicants.)

## RECOMMENDED MITIGATING CONDITIONS OF APPROVAL FOR THE SUBDIVISION

1. A document entitled "Notifications to Future Property Owners" that includes the following notifications and the attachments listed below shall be included in the submittal of the final plat to the Planning Department and filed with the final plat:

**Notification of Proximity to Agricultural Operations**. This subdivision is located near existing agricultural activities. Some may find activities associated with normal agricultural activities objectionable and dangerous. (Effects on Agriculture)

Limitation of Access onto a Public Road. A "no-ingress/egress" restriction exists along southern half of the internal subdivision road as it traverses through Lots 2 through 5 and along the Hamilton Heights Road frontage of this subdivision, excepting for the approved approach. All lots within this subdivision must use this approved approach. This limitation of access may be lifted or amended only with the approval of the Board of County Commissioners. (Effects on Local Services and Public Health and Safety)

**Notification of Road Maintenance Agreement**. The internal subdivision road is not maintained by Ravalli County, the State of Montana, or any other governmental entity. Neither the County nor the State assumes any liability for lacking or improper maintenance. A Road Maintenance Agreement for this road was filed with this subdivision and outlines which parties are responsible for maintenance and under what conditions. (Effects on Local Services)

Notification of Irrigation Facilities and Easements. Within this subdivision there are irrigation easements, as shown on the final plat. All downstream water-right holders have the right to maintain and repair their irrigation facilities whenever necessary to keep them in good condition. The filed subdivision plat shows the irrigation easements on the property. The Bitter Root Irrigation District must approve any relocation or alteration (e.g. installation of a culvert) of irrigation ditches/pipelines. Any act that damages or destroys a ditch, interferes with its operation or maintenance in any way, or restricts access to the ditch so as to interfere with its maintenance is expressly prohibited. The downstream water right holders and those acting with the approval of the Bitter Root Ditches Irrigation District have the right to use the easements to maintain the ditches. Please contact the Bitter Root Irrigation District, 1182 Lazy J Lane, Corvallis, Montana, 59828, 961-1182 for more information. (Effects on Agricultural Water User Facilities)

Notification of No-Build/Alteration Zone. Within this subdivision there are no-build/alteration zones, as shown on the plat, to restrict building in areas with steep slopes and around an unnamed creek. No new structure, with the exception of fences, may be constructed in these areas. No new utilities, with the exception of wells, may be constructed in these areas. No fill may be placed in this area and the vegetation shall be retained in its natural condition. Roads, trails, and utility crossings through this area are not permitted. [The subdividers shall include a reduced copy of the final plat showing the no-build/alteration zones as an exhibit to this document.] (Effects on Natural Environment, Wildlife & Wildlife Habitat, Public Health & Safety)

**Notification of "Very Limited" Soils.** Within this subdivision there are areas of the property identified by the Natural Resources Conservation Service (NRCS) as potentially having soils rated as "very limited" for road construction and building sites. The approximate locations of these areas can be found on a reduced copy of the final plat. Descriptions of the severe soils in question are included as exhibits to this document [the subdividers shall include the exhibits as attachments]. (Effects on Public Health & Safety)

**Notification of Proximity to Unnamed Intermittent Creek.** Within this subdivision there is an unnamed intermittent creek. There is an inherent hazard associated with creeks, due to potential soil erosion, flooding, and movement of the creek channel. (Effects on Public Health & Safety)

2. Protective covenants for this subdivision shall be filed with the final plat that include the following provisions:

Waiver of Protest to Creation of RSID/SID. Owners and their successors-in-interest waive all rights in perpetuity to protest the creation of a city/rural improvement district for any purpose allowed by law, including, but not limited to, a community water system, a community wastewater treatment system, and improving and/or maintaining the roads that access the subdivision, including related right-of-way, drainage structures, and traffic control signs. (Effects on Local Services)

Living with Wildlife. (See Exhibit A-1 for required provisions.) (Effects on Agriculture and Wildlife & Wildlife Habitat)

**Riparian Covenants.** Healthy, naturally functioning riparian areas benefit fish and wildlife, as well as agriculture and recreation. The goal of the "no build/alteration zone" along the intermittent creek traversing the subdivision is to help preserve the water quality and functionality of this drainage area, protect and enhance potential riparian areas, and protect property from eroding banks and possible flooding. (Effects on Natural Environment and Wildlife Habitat)

A 100-foot no-build/alteration zone is centered on the unnamed creek/natural drainage that traverses Lots 8 through 11 of the subdivision. The following covenants apply to the no-build/alteration zone:

a. No new building or alteration is allowed in the zone.

b. Only non-motorized access is allowed (except for certain maintenance needs such as weed spraying).

c. Do not cut or remove live or dead vegetation, particularly shrubs and trees from the no-build/alteration zone. Exception: proper use of chemicals or other methods of control (other than mowing) for noxious weeds is allowed, and planting appropriate native riparian vegetation (trees, shrubs) is allowed.

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d. Do not plant lawns or crops in the zone. Leave or plant native vegetation as ground cover as this avoids the use of fertilizers that contribute to water quality problems.

e. If planting is planned for this area, the goal should be to re-establish native plant species

appropriate to the site.

f. In summary, allow the riparian areas to remain undisturbed. Do not modify them unless such change would help return the area to a natural state.

g. These riparian covenants cannot be altered or eliminated without consent of the governing

body (Ravalli County Commissioners).

Lighting for New Construction. To promote public health and safety, reduce energy consumption, and reduce impacts to nocturnal wildlife, full cut-off lighting is recommended for any new construction within this subdivision. A full cut-off fixture means a fixture, as installed, that is designed or shielded in such a manner that all light rays emitted by the fixture, either directly from the lamps or indirectly from the fixture, are projected below a horizontal plane through the lowest point on the fixture where light is emitted. The source of light should be fully shielded on the top and sides, so as not to emit light upwards or sideways, but only allowing light to shine down towards the subject that is to be lighted. For more information, visit www.darksky.org. (Effects on Natural Environment and Wildlife & Wildlife Habitat)

**Radon Exposure.** The owner understands and accepts the potential health risk from radon concentrations, which are presently undetermined at this location. Unacceptable levels of radon can be reduced through building design and abatement techniques incorporated into structures. Property owners are encouraged to have their homes tested for radon. Contact the Ravalli County Environmental Health Department for further information. (Effects on Public Health & Safety)

**Control of Noxious Weeds.** A weed control plan has been filed in conjunction with this subdivision. Lot owners shall control the growth of noxious weeds on their respective lot(s). Contact the Ravalli County Weed District for further information. (*Effects on Agriculture and Natural Environment*)

Required Posting of County-Issued Addresses for Lots within this Subdivision. The Corvallis Rural Fire District has adopted the Uniform Fire Code which requires lot owners to post County-issued addresses at the intersection of the driveway leading to each residence and the road providing access to the lot as soon as construction on the residence begins. (Effects on Local Services and Public Health & Safety)

Access Requirements for Lots within this Subdivision. The Corvallis Rural Fire District has adopted the Uniform Fire Code. All accesses, including driveways to residences over 150' in length, must have a minimum unobstructed travel surface width of 20', a vertical clearance of 13'6" and an all-weather surface that can accommodate the weight of a fire truck. Please contact the Corvallis Rural Fire District for further information. (Effects on Local Services and Public Health & Safety)

**Amendment.** Written governing body approval shall be required for amendments to provisions of the covenants that were required to be included as a condition of subdivision approval. (Effects on all six criteria)

3. The subdividers shall include an RSID/SID waiver in a notarized document filed with subdivision plat that states the following: Owners and their successors-in-interest waive all rights in perpetuity to protest the creation of a city/rural improvement district for any purpose allowed by law, including, but not limited to a community water system, a community Hamilton Heights Blk 13, Lots A-D, AP Staff Report

- wastewater treatment system, and improving and/or maintaining the roads that access the subdivision including related right-of-way, drainage structures, and traffic control signs. (Effects on Local Services)
- 4. The subdividers shall provide evidence with the final plat submittal that they have applied for County-issued addresses for each lot within this subdivision. (Effects on Public Health & Safety)
- 5. Prior to final plat approval, the subdividers shall provide a letter from the Corvallis Rural Fire District stating that the subdividers have provided the required 1,000 gallon-per-minute water supply or 2,500 gallon-per-lot water storage for fire protection for each lot within this subdivision. Alternatively, the subdividers may provide evidence that a \$500-per-lot contribution has been made to the Corvallis Rural Fire District with the final plat submittal in lieu of the required water supply or water storage for fire protection. (Effects on Local Services and Public Health & Safety)
- 6. The subdividers shall submit a letter or receipt from the Corvallis School District stating that they have received a \$250-per-lot contribution prior to final plat approval. Alternatively, the subdividers may place an encumbrance on the final plat stating that the \$250 contribution shall be made to the School District upon first conveyance, including lease or rent, of each lot. (Effects on Local Services)
- 7. The final plat shall show a no-ingress/egress zone along the Hamilton Heights Road frontage of the subdivision, excepting the approach for the internal subdivision road, as approved by the Road and Bridge Department. A no-ingress/egress zone shall also be shown along both sides of the internal subdivision road as it traverses through the southern half of Lots 2, 3, 4, and 5. (Effects on Local Services and Public Health and Safety)
- 8. Existing and proposed irrigation easements shall be shown on the final plat to provide irrigation water to each lot within the subdivision. (Effects on Agricultural Water User Facilities)
- 9. The internal subdivision road shall be labeled as a "public road and utility easement" on the final plat. (Effects on Local Services)
- 10. A stop sign and road name sign shall be installed at the intersection of the internal subdivision road and Hamilton Heights Road prior to final plat approval. (Effects on Local Services and Public Health & Safety)
- 11. The applicants shall provide evidence that plans for a Collection Box Unit (CBU), including location of the box and specifications, have been approved by the local post office prior to final plat approval. (Effects on Local Services)
- 12. A 100-foot wide no-build/alteration zone centered on the unnamed creek traversing the northern edge of the property shall be shown on the final plat, as shown on the preliminary plat. (Effects on the Natural Environment, Wildlife & Wildlife Habitat, Public Health & Safety)
- 13. A no-build/alteration zone on slopes greater than 25% shall be shown on the final plat, excepting the proposed road easement for Prestige Way. (Effects on Public Health & Safety)

- 14. The subdivider shall submit an (amount)-per-lot contribution to the Ravalli County Treasurer's Office to be deposited into account for the Sheriff's Office prior to final plat approval. (Effects on Local Services)
- 15. To mitigate impacts on public health and safety, the applicant shall provide evidence that the trees located in the Hamilton Heights Road easement limiting sight distance visibility have been removed prior to final plat approval. The final approach permit signed by the Road and Bridge Department should indicate that the trees were removed. (Effects on Public Health and Safety)

### **SUBDIVISION REPORT**

### COMPLIANCE WITH PREREQUISITES TO APPROVAL

Section 3-2-8(a) of the RCSR states that the BCC shall not approve or conditionally approve a subdivision application and preliminary plat unless it is established by credible evidence that the proposed subdivision meets the following requirements:

A. Provides easements for the location and installation of any planned utilities.

Findings of Fact

1. The preliminary plat indicates the location of proposed and existing utility easements.

2. Section 3-4-4(a)(ii) of the RCSR requires that the existing and proposed utility easements are shown on the final plat.

Conclusion of Law

The proposed subdivision application provides for utility easements.

B. Provides legal and physical access to each parcel within the subdivision and the notation of that access is included on the applicable plat and in any instrument transferring the parcel.

Findings of Fact

- 1. The subject property is accessed by Hamilton Heights Road and the internal subdivision road (Prestige Way).
- 2. Hamilton Heights Road is listed as a County-maintained road in Exhibit A of the RCSR.
- 3. The applicant is proposing a 60-foot wide public road and utility easement for Prestige Way to serve the lots within the subdivision. Section 3-4-4(a)(ii) of the RCSR requires that public road and utility easements be shown on the final plat.
- 4. The applicant is proposing to improve the internal road to meet County standards. The Ravalli County Road and Bridge Department has issued preliminary approval of the road plans (Exhibit A-2). Section 3-4-4 requires final road plans, road certifications, and final approval from the Road Department that the roads were constructed to meet County standards prior to final plat approval.

### Conclusions of Law

- 1. Legal and physical access is provided on Hamilton Heights Road.
- 2. With the final plat requirements, legal and physical access will be provided on Prestige Way.
- C. Assures that all required public or private improvements will be installed before final plat approval, or that their installation after final plat approval will be guaranteed as provided by Section 3-4-2 of the RCSR.

Findings of Fact

- 1. The applicant is proposing to construct the internal road within the subdivision to meet County standards.
- 2. A road name sign and stop sign are required to be installed at the intersection of Prestige Way and Hamilton Heights Road.
- 3. Irrigation infrastructure shall be installed to allow for delivery to each lot within the subdivision, as approved by BRID.
- 4. Section 3-4-4(a)(xxvi) requires that the applicant submit evidence that improvements have been made in accordance with the conditions of approval and requirements of final plat approval and certified by the subdividers prior to final plat approval.

Conclusion of Law

The final plat requirements or an improvements agreement and guaranty will ensure that all improvements are installed.

D. Assures that the requirements of 76-3-504(1)(j), MCA, regarding the disclosure and disposition of water rights as set forth in Chapter 5 have been considered and will be accomplished before the final plat is submitted.

Findings of Fact

- 1. The application states that the property has 37.4 irrigated acres from the Bitter Root Irrigation District (BRID).
- 2. A letter from BRID approves the allocation of 1.5 to 2.4 irrigated acres to each lot within the subdivision.

#### Conclusion of Law

This requirement has been met.

E. Assures that the requirements of 76-3-504(1)(k) MCA, regarding watercourse and irrigation easements as set forth in Chapter 5 have been considered and will be accomplished before the final plat is submitted.

Findings of Fact

- 1. According to the application and the preliminary plat, there is an existing 15-foot wide irrigation easement centered on a ditch that traverses Lots 1 through 6 and Lot 14 of the subdivision from east to west.
- 2. The applicant is proposing to use the existing 15-foot wide irrigation easement to serve Lots 1 through 6 and Lot 14, a proposed 10-foot easement is proposed to serve Lots 15 through 20, and an irrigation easement along the internal road is proposed to serve Lots 8 through 13 and Lot 17. BRID has approved the irrigation plan.
- 3. Section 3-4-4(a)(ii)(V) requires that irrigation easements be shown on the final plat.
- 4. The placement of structures or the planting of vegetation other than grass within the ditch easement is prohibited in 76-3-504(1)(k) MCA, without the written permission of the ditch owner (Bitter Root Irrigation District). To meet this requirement, the applicant shall place a notification in the Notifications Document that permission from the Bitter Root Irrigation District is required for any alterations within the irrigation easement. (Condition 1)

Conclusion of Law

With the requirements of final plat approval and a condition requiring a notification that permission from the Bitter Root Irrigation District is required for any alterations within the easement, this requirement will be met.

F. Provides for the appropriate park dedication or cash-in-lieu, if applicable.

Findings of Fact

1. The application states that 2.11 acres are required to meet the parkland dedication requirement.

2. The applicant is proposing to give cash-in-lieu of parkland.

3. Because of the remote location and topographical difficulties at the subdivision site, the Park Board recommends cash-in-lieu of parkland dedication. (Exhibit A-3)

Conclusion of Law

The applicant has proposed cash-in-lieu of parkland that meets the requirements.

## G. Overall Findings and Conclusions on Prerequisite Requirements

Finding of Fact

The application and conditions/requirements of final plat approval show that the prerequisite requirements have been met.

Conclusion of Law

With the conditions and requirements of final plat approval, there is credible evidence that the subdivision application meets the prerequisite requirements.

COMPLIANCE WITH APPLICABLE REGULATIONS

Section 3-2-8(b) of the RCSR states that in approving, conditionally approving, or denying a subdivision application and preliminary plat, the BCC shall ensure the subdivision application meets Section 3-2-8(a) above, and whether the proposed subdivision complies with:

## A. These regulations, including, but not limited to, the standards set forth in Chapter 5.

Findings of Fact

1. The Ravalli County Planning Department has reviewed this proposal in compliance with the procedures provided in Chapter 3 of the Ravalli County Subdivision Regulations. With the conditions and requirements of final plat approval, the application will meet the design standards in Chapter 5.

Conclusions of Law

- 1. With the conditions and requirements of final plat approval, the preliminary plat and subdivision application meet all applicable standards required in the RCSR.
- 2. The procedures for the application and review of this proposed subdivision have been followed.

## B. Applicable zoning regulations.

Findings of Fact

- 1. The subject property is under the jurisdiction of the interim zoning regulation limiting subdivisions to a density of one dwelling per two acres (recorded as Resolution 2038). The application complies with Resolution 2038.
- 2. The property is not within one of the voluntary zoning districts in Ravalli County.

Conclusion of Law

This proposal complies with existing zoning regulations.

## C. Existing covenants and/or deed restrictions.

Finding of Fact

There are no existing covenants on the property.

Conclusion of Law

There are no covenants that apply to this property.

## D. Other applicable regulations.

Findings of Fact

1. Following are applicable regulations:

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- a. Montana Subdivision and Platting Act, Title 76, Chapter 3, MCA
- b. Montana Sanitation in Subdivisions Act, Title 76, Chapter 4, MCA
- c. Ravalli County Subsurface Wastewater Treatment and Disposal Regulations
- d. Montana Standards for Subdivision Storm Drainage (DEQ Circular 8)
- e. Applicable laws and policies requiring permits related to development (U.S. Army Corps of Engineers, Bitterroot Conservation District, Ravalli County Road & Bridge Department, Montana Department of Transportation, Montana Department of Environmental Quality, etc.)
- 2. The applicants were made aware of the applicable regulations at the updated preapplication conference held on February 7, 2007.

### Conclusion of Law

The application appears to meet all of the applicable regulations.

E. The MSPA, including but not limited to an evaluation of the impacts of the subdivision on the following criteria:

### **CRITERION 1: EFFECTS ON AGRICULTURE**

### Findings of Fact:

- 1. The proposed major subdivision on 42.24 acres will result in 20 lots that average 2.11 acres. The property is located approximately 4.5 miles southeast of the community of Corvallis off Eastside Highway and Hamilton Heights Road.
- 2. The property is located in an area of residential and agricultural uses. To mitigate impacts on agriculture, a notification of proximity to agricultural operations shall be included in the notifications document filed with the final plat. The protective covenants, also filed with the final plat, shall include a provision requiring homeowners to keep pets confined to the house, a fenced yard, or in an outdoor kennel. (Conditions 1 and 2)
- 3. According to the application, the property has been used for agriculture in the past, but is currently being used for horse pasture. The landscape appears to be altered due to the presence of horses.
- 4. Based on the noxious weed evaluation form submitted with the preliminary plat application, the property has about one acre of Hoary Alyssum, scattered Spotted Knapweed, Canada Thistle, and about four acres of Tall Buttercup. Section 3-4-4(a)(xi) requires the applicant to submit a Ground Disturbance and Noxious Weed Management Plan approved the Ravalli County Weed District. To further mitigate impacts on surrounding agriculture, a provision in the covenants shall require future lot owners to control weeds in conjunction with the filed plan. (Condition 2)
- 5. Approximately 20% of the property has Prime Farmland if Irrigated soils (Map Unit Symbol 100B), however most of the property is listed as Farmland of Local Importance (Map Unit Symbols 182B, 183C, and 201B) on the Web Soil Survey by the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS). A description of Farmland of Local Importance is attached (Exhibit A-4). In a conversation with Jay Skovlin, local NRCS soil scientist, Mr. Skovlin stated that the Farmland of Local Importance classification was not intended to be used to determine important agricultural land. It is the lowest tier of farmland soils and the criteria have a low threshold so this classification does not show the most productive soils in the Valley. The classification will be used as a preliminary screening tool for the Farm and Ranch Land Protection Program. Mr. Skovlin will be writing the County a letter to summarize this information.

## Conclusions of Law:

- 1. The creation of these lots will take a small amount of Prime Farmland if Irrigated out of production. The County has been advised that the Farmland of Local Importance classification should not be used to determine productive agricultural land.
- 2. With the mitigating conditions of approval and requirements of final plat approval, impacts of the subdivision on surrounding agriculture will be reduced.

## **CRITERION 2: EFFECTS ON AGRICULTURAL WATER USER FACILITIES**

Findings of Fact

- 1. The application states that 37.4 irrigated acres of water are provided to the property by the Bitter Root Irrigation District (BRID). According to the application and the preliminary plat, there is a 15-foot wide existing irrigation easement centered on a culverted ditch that traverses the property from east to west along the southern quarter of the parcels. The irrigation ditch appears to serve property to the east and west. Irrigation easements for the lots within the subdivision are shown on the preliminary plat and a reduced copy of the preliminary plat. The applicant is proposing that Lots 1 through 5 and Lot 15 will be allotted 1.5 irrigated acres each, Lots 6, 7, 10 through 14, and 16 through 20 will each be allotted 2.0 irrigated acres, and Lot 8 will be allotted 2.4 irrigated acres. (Application)
- 2. As a requirement of final plat approval, Section 3-4-4(a)(xxi) of the RCSR requires the approval of the downstream water users, in this case the Irrigation District, when irrigation infrastructure is to be altered. This provision applies to the extension of the existing infrastructure to serve all the lots within the subdivision.
- 3. A letter from the Bitter Root Irrigation District, dated April 11, 2007, states their approval of the re-allocation of water rights and Irrigation Plan. (Application)
- 4. Installation of irrigation infrastructure is required to be completed prior to final plat approval.
- 5. To notify future property owners of the irrigation rights associated with this property and the role of the Irrigation District and to mitigate potential impacts on agricultural water user facilities, a notification of the irrigation facilities and easements shall be filed with the final plat. (Condition 1)
- 6. The existing and proposed locations of all irrigation facilities/ditches within their associated easements are required to be shown on the final plat. Irrigation easements shall be shown on the final plat as a condition of approval in order to mitigate impacts of the subdivision on agricultural water user facilities. (Condition 8)

Conclusion of Law:

With the mitigating conditions of approval and requirements of final plat approval, impacts on agricultural water user facilities will be reduced.

## **CRITERION 3: EFFECTS ON LOCAL SERVICES**

Findings of Fact:

- 1. The subdivision is located within the Corvallis Rural Fire District. The Corvallis Rural Fire District has provided comments on previous subdivision proposals indicating they have adopted a policy which addresses access, posting of addresses, and water supply requirements. The subdividers shall meet the water supply requirements for the Corvallis Rural Fire District, which is a 1,000 gallon per minute water supply or a 2,500 gallon per lot water storage. Alternatively, the subdividers can contribute \$500 per lot and provide a letter from the Corvallis Rural Fire District that the contribution has been made prior to final plat approval. Conditions of approval will meet the recommendations of the Corvallis Rural Fire District. (Exhibit A-5) (Conditions 2 and 5)
- 2. With this subdivision, it is estimated that approximately 10 school-aged children will be added to the Corvallis School District, assuming an average of .5 children per single family residence (Source: Census 2000).

3. The Corvallis School District was notified of the subdivision proposal. In a letter dated February 14, 2007, the School District stated that it has no specific objection to the subdivision, but noted that an increase in students continues to affect their infrastructure. The subdividers are proposing to contribute a voluntary donation of \$250-per-lot to the school district. A condition that the subdividers provide evidence of a contribution to the School District is required prior to final plat approval. (Exhibit A-6) (Condition 6)

4. Individual wells and wastewater treatment systems are proposed to serve the lots.

- 5. To mitigate potential impacts of this subdivision on any possible future public water, sewer system, or improvements to the road system, the RSID/SID waiver filed with the final plat shall address these services/facilities. (Conditions 2 and 3)
- 6. The Ravalli County Sheriff's Office provides law enforcement services to this area. No comments have been received by the Sheriff's Office. The current level of service is not known, but it is generally understood that the Sheriff's Office is operating at an inadequate level of service. The applicant is not proposing any mitigation. To mitigate impacts on the law enforcement, the subdivider shall submit an (amount)-per-lot contribution to the Ravalli County Treasurer's Office to be deposited into account for the Sheriff's Office prior to final plat approval. (Condition 14) (Staff Note: Since the current or planned level of service for the Sheriff's Office is unknown and the applicant has not proposed any mitigation, Staff recommends the BCC negotiate an amount per lot with the applicants.)

7. The Marcus Daly Memorial Hospital EMS Department provides ambulance services to the property.

8. Bitterroot Disposal provides solid waste disposal service to this site.

9. There are twenty proposed single-family residential lots within this subdivision. It is estimated at build-out that this subdivision will generate a total of 160 vehicular trips per day, assuming 8

trips per day per single-family dwelling.

10. Hamilton Heights Road, a County-maintained road providing access to the subdivision from Eastside Highway, does not meet County standards. The applicant is required to pay the pro rata share of the cost to improve the portion of this road providing access to the subdivision from Eastside Highway to meet County standards. The preliminary pro rata share estimate is \$4,184.02.

11. The subdividers are proposing to construct one internal subdivision road, Prestige Way, to provide service to all the lots within the subdivision. The application packet states that the internal road is proposed to meet County standards and have an 18-foot-wide asphalt paved travel surface with two-foot shoulder widths within a 60-foot-wide public utility easement. The initial approach up Prestige Way has a grade of up to eight percent. The RCSR maximum road grade allowed is 10%. An engineer's certification that the roads meet County standards is a requirement of final plat approval. The road plans have received preliminary approval by the Road Department. (Exhibit A-2)

12. To mitigate impacts on the local road system, the final plat shall show a no-ingress/egress zone along the Hamilton Heights Road frontage of the subdivision, except the Ravalli County Road and Bridge Department (RCRBD) approved approach for the internal subdivision road. A no-ingress/egress zone shall also be shown along both sides of Prestige Way as it travels through the southern portions of Lots 2 through 5 to keep future lot owners from accessing off steep slopes. A notification of this limitation of access shall be included in the notifications

document, (Conditions 1 and 7)

13. To mitigate impacts on the local road system, a stop sign and road name sign shall be installed at the intersection of Hamilton Heights Road and Prestige Way prior to final plat approval. (Condition 10)

14. Submittal of a final grading and drainage plan approved by Montana Department of Environmental Quality (DEQ), a General Discharge Permit for Storm water Associated with Construction activity from DEQ (if required), an approved approach permit from the Ravalli County Road and Bridge Department for the internal subdivision road(s), an approved road

Hamilton Heights Blk 13, Lots A-D, AP Staff Report

name petition, and certification that the constructed road meets County standards are requirements of final plat approval.

15. Installation of all infrastructure improvements is required to be completed prior to final plat approval, which includes construction of the roads and storm water drainage facilities for the interior road, and installation of the stop sign and road name sign.

16. To mitigate impacts on local services and ensure public access, the easement for the internal subdivision road shall be labeled as a public road and utility easement on the final plat.

(Condition 9)

- 17. A preliminary road maintenance agreement was included in the application packet. A provision within the document prohibits on-street parking to mitigate impacts on Local Services. The final plat application packet is required to include a road maintenance agreement that meets the requirements of the Ravalli County Subdivision Regulations. To mitigate impacts on Local Services, a notification of the road maintenance agreement shall be included in the notifications document filed with the final plat. (Condition 1)
- 18. The United States Postal Service (USPS) sent a letter to the Planning Department on June 8, 2007 and an email on June 29, 2007 requesting that Collection Box Units (CBUs) be required for all subdivisions with eight or more lots (or if the local post office requests a CBU) and that the locations of the boxes be approved by the USPS (Exhibit A-7).
- 19. To mitigate impacts on local services, the applicants shall provide evidence that plans for a CBU (location and specifications) have been approved by the local post office. (Condition 11)

Conclusion of Law:

With the mitigating conditions of approval and requirements of final plat approval, impacts of the subdivision on local services will be reduced.

### **CRITERION 4: EFFECTS ON NATURAL ENVIRONMENT**

Findings of Fact:

 The property is currently being used as horse pasture and is covered with grasses, weeds, and a couple trees.

2. Section 5-4-5(b)(3) requires internal subdivision roads serving six to 20 lots to be paved. The

paving of the road will reduce air pollution from the subdivision.

3. The subdividers are proposing individual wells and wastewater treatment systems to serve each lot within this subdivision. A Certificate of Subdivision Plat Approval from Montana Department of Environmental Quality (DEQ) is required to be submitted with the final plat.

4. The Ravalli County Environmental Health Department provided documentation indicating that they have received adequate information for local subdivision review to occur. (Application)

- 5. An unnamed creek traverses the northern edge of this subdivision, which drains an area less than 15 square miles and does not require a floodplain analysis. FWP recommended designating a 25 to 50-foot no-build/alteration zone extending outward from the centerline of the drainage/creek area and delineating this area on the plat. The applicant is proposing a 100-foot wide no-build/alteration zone along the unnamed creek. To mitigate impacts on the natural environment, the no-build/alteration zone shall be shown on the final plat, as proposed on the preliminary plat. A notification of the no-build/alteration zones and a reduced copy of the final plat showing the locations of the no-build zones shall be included in the notifications document and filed with the final plat. (Conditions 1 and 12)
- 6. Although FWP did not specifically recommend riparian covenants for this area, they have provided comments on other subdivisions with riparian areas. To mitigate impacts on the natural environment, riparian covenants applying to the no-build/alteration zone shall be included in the covenants filed with the final plat. (Exhibit A-1) (Condition 2)
- 7. The preliminary plat shows wetlands on the property along the ditch to the south of the subdivision along the easement for Hamilton Heights Road. The applicant has proposed to install a culvert 20 feet west of the internal road approach adjacent to Hamilton Heights Road.

Hamilton Heights Blk 13, Lots A-D, AP Staff Report

An application has been submitted to the US Army Corps of Engineers for this work because wetlands are presently located in that area. Section 3-4-4(a)(xxiii) requires the applicant to submit a copy of the final permit from the US Army Corps prior to final plat approval.

8. To mitigate the impacts of light pollution stemming from new construction, the protective covenants shall include a provision recommending full cut-off lighting on new construction.

(Condition 2)

- 9. Based on the noxious weed evaluation form submitted with the preliminary plat application, the property has approximately one acre of Hoary Alyssum, scattered Spotted Knapweed, Canada Thistle, and about four acres of Tall Buttercup. An approved noxious weed and vegetation control plan is required to be filed with the final plat for each phase. According to MCA 7-22-2152, any person proposing a development that needs state or local approval and that results in the potential for noxious weed infestation within a weed district shall notify the weed board at least 15 days prior to activity. Consequently, 15 days prior to activities requiring a revegetation plan, such as road construction, the plan shall be submitted to the weed board for approval by the board. To mitigate impacts on the natural environment, a noxious weed control provision shall be included in the protective covenants filed with the final plat for this subdivision. (Condition 2)
- 10. The Montana Natural Heritage Program did not identify any sensitive plant species located within the same section as the subdivision.

Conclusion of Law:

Impacts from this subdivision on the natural environment will be reduced with the mitigating conditions and requirements of final plat approval.

### CRITERION 5: EFFECTS ON WILDLIFE & WILDLIFE HABITAT

Findings of Fact:

1. The property is approximately 5 miles southeast of Corvallis and is adjacent to development that is approximately one unit to twelve acres.

2. A letter from Montana Fish, Wildlife, and Parks (FWP) recommends that the Living with Wildlife provisions be included with the covenants for this subdivision. (Exhibit A-1) (Condition 2)

3. To mitigate the impacts of light pollution stemming from new construction, the protective covenants shall include a provision recommending full cut-off lighting on new construction. (Condition 2)

4. The property is not located within big-game winter range, as identified by Montana Fish,

Wildlife, and Parks.

- 5. According to the Montana Natural Heritage Program, three sensitive species are located in the same section as this property: Townsend's Big-Eared Bat (*Corynorhinus townsendii*), Olive-sided Flycatcher (*Contopus cooperi*), and Fringed Myotis (*Myotis thysanodes*). Due to lack of suitable habitat for these animals, the subdividers requested and received a waiver from the requirement to submit a sensitive species report. (Application)
- 6. According to the environmental assessment, trout may be present within the unnamed creek located in the northern edge of the subdivision. The applicant proposed a no-build/alteration zone within 100-feet of the creek. To mitigate impacts on wildlife & wildlife habitat, the no-build/alteration zone along the unnamed creek shall be shown on the final plat as shown on the preliminary plat and a notification of the no-build/alteration zone shall be in the notifications document filed with the final plat. In addition, riparian provisions shall be included in the covenants filed with the final plat. (Conditions 1, 2, and 12)

Conclusion of Law:

With the mitigating conditions of approval and requirements of final plat approval, impacts on Wildlife & Wildlife Habitat will be reduced.

### CRITERION 6: EFFECTS ON PUBLIC HEALTH & SAFETY

Findings of Fact:

1. Some large trees are located within the Hamilton Heights road easement to the west of the subdivision approach. To increase traffic visibility and mitigate impacts on public health & safety, the preliminary approach permit requires that these trees be removed (Application). To mitigate impacts on public health and safety, the applicant shall provide evidence that the trees have been removed prior to final plat approval. (Condition 15)

2. To mitigate impacts on local services and public health & safety, a stop sign and road name sign shall be installed at the intersection of the internal subdivision road (Prestige Way) and

Hamilton Heights Road prior to final plat approval. (Condition 10)

3. To mitigate impacts on public health & safety, the final plat shall show a no-ingress/egress zone along the Hamilton Heights Road frontage of the subdivision, except the Ravalli County Road and Bridge Department (RCRBD) approved approach for the internal subdivision road. A no-ingress/egress zone shall also be shown along both sides of Prestige Way as it travels through Lots 2 through 5 to keep future lot owners from accessing off steep slopes. A notification of this limitation of access shall be included in the notifications document. (Conditions 1 and 7)

4. According to the application, the nearest police protection to the subdivision is the Ravalli County Sheriff's Office, located approximately 5.5 miles away. To mitigate impacts on the law enforcement, the subdivider shall submit an (amount)-per-lot contribution to the Ravalli County Treasurer's Office to be deposited into account for the Sheriff's Office prior to final plat approval. (Condition 14) (Staff Note: Since the current or planned level of service for the Sheriff's Office is unknown and the applicant has not proposed any mitigation, Staff

recommends the BCC negotiate an amount per lot with the applicants.)

5. The proposed subdivision is located within the Corvallis Rural Fire District, located approximately 5 miles from the subdivision. To mitigate impacts on public health & safety, access requirements and county-issued address requirements shall be placed in the covenants. The subdividers shall also provide the required water storage/supply or a \$500-per-lot donation to the Corvallis Rural Fire District. (Conditions 2 and 5)

6. To mitigate impacts on public health & safety, the subdividers shall apply for County-issued addresses and a provision requiring property owners to post County-issued addresses at their

driveways shall be in the covenants. (Conditions 2 and 4)

7. According to the application, the subdivision is located 5.9 miles from the Marcus Daly Hospital and the same distance from the ambulance service serving the hospital. The Marcus Daly Memorial Hospital EMS Department was notified by mail of the proposal, but no comments have been received to date.

8. Individual wells and wastewater treatment systems are proposed for lots within this subdivision. These items will be reviewed by the Montana Department of Environmental Quality. (*Natural* 

Environment)

9. To mitigate impacts on public health & safety, a notification of proximity to the unnamed creek along the northern boundary of the property shall be included in the notifications document.

(Condition 1)

10. To mitigate impacts on public health & safety, a 100-foot wide no-build/alteration zone along the unnamed creek shall be shown on the final plat, as shown on the preliminary plat. A notification of the no-build/alteration zone shall be included with the notifications document.

(Conditions 1 and 12)

11. The preliminary plat shows that Lots 1 through 5 have steep slopes (greater than 25%), which are required to be identified as no build/alteration zones on the final plat. The first portion of the internal road traverses the steep slopes. The applicant submitted preliminary road plans to the Road and Bridge Department showing how the road would be graded and preliminary approval has been granted. In order to mitigate impacts on public health & safety, a no-build/alteration zone on slopes greater than 25% shall be shown on the final plat, excepting the proposed road Hamilton Heights Blk 13, Lots A-D, AP Staff Report

easement for Prestige Way and a notification of the no-build/alteration zone shall be included in the notifications document. (Conditions 1 and 13)

12. The preliminary plat and soils map indicate that the subdivision may have soils rated as very limited for road and building construction. To educate property owners and to mitigate potential impacts of this subdivision on public health & safety, a notification of the potential for very limited soils shall be included in the notifications document filed with the final plat. A reduced plat showing the approximate locations of soils rated as very limited for roads and building construction and descriptions of the very limited soils in question shall be attached to the notifications document as an exhibit. (Condition 1)

13. There is a prevalence of radon in the County and to mitigate impacts on public health & safety, the covenants shall include a statement regarding radon exposure. (Condition 2)

### Conclusion of Law:

The mitigating conditions and requirements of final plat approval will address impacts on public health & safety.



RECEIVED

AUG 0 9 2007 IC-07-08-987 Ravalli County Planning Dept.

## **EXHIBIT A-1**

Region 2 Office 3201 Spurgin Road Missoula, MT 59804-3099 406-542-5500 Fax 406-542-5529 August 8, 2007

Vanessa Perry Ravalli Co. Planning Department 215 S. 4<sup>th</sup> St., Ste. F Hamilton, MT 59840

Reference: Hamilton Heights, Lots A-D (Blk 13; Powell)--Proposed major (20 lots on

42.0 acres) subdivision, southeast of Corvallis

Dear Ms. Perry:

We have reviewed the preliminary plat (21-lot version, dated 7-16-2006, and the revised 20-lot version, dated 6-27-2007) for this proposed subdivision. We also reviewed this parcel and its surrounds on the Montana Cadastral website (<a href="http://gis.mt.gov/">http://gis.mt.gov/</a>) and the US Geological Survey topographic map for this locale. Based on reviewing this information and our field knowledge of this location, we note and recommend the following:

- 1. This subdivision is located in a rural area, and is about one-quarter mile from Cow Creek; agricultural and other open lands are also nearby. We believe there is an elevated possibility of human/wildlife interactions at this location. In particular, wildlife such as white-tailed deer, fox, skunk and magpie could be found in the area, as well as an occasional black bear. Numerous small mammal and bird species could also be found nearby. We recommend that "living with wildlife" issues be conveyed as part of the covenants to future homeowners in this subdivision, in order to help residents deal with and avoid potential wildlife problems. We have enclosed our recommended version of such covenants for this location.
- 2. The US Geological Survey topographic map for this area indicates a side channel (probably intermittent) of Cow Creek that flows east to west adjacent and/or through the northern boundary of this subdivision. (The USGS map also indicates another east-west side channel of Cow Creek near the southern edge of this subdivision, but that drainage appears to be separated from this subdivision by Hamilton Heights Road.) In order to

protect the natural drainage feature (along the northern boundary) and its function, we recommend consideration of:

- a. Designating a 25-50 foot "no build/alteration" setback extending outward from each side of the centerline for this drainage, to be applied to any portions of such a setback that fall within this subdivision;
- b. Delineating and labeling this setback on the plat; and
- c. Adding protective riparian covenants to guide the use of this area (FWP could help with suggestions for guidelines).

Thank you for providing the opportunity for FWP to comment on this subdivision. (For an electronic copy of these comments, please contact Sharon Rose at 406-542-5540 or <a href="mailto:sharon">shrose@mt.gov.</a>)

Sincerely,

Mack Long

Regional Supervisor

ML/sr

Enclosure: "Living with Wildlife" covenants

Recommended Covenants for <u>Hamilton Heights</u>. Lot A-D (Blk 14; Brooks Cole Construction & Terry <u>Frey</u>) major subdivision, suggested by Montana Fish, Wildlife & Park; Missoula; <u>August 8</u>, 2007

## Section \_\_\_: Living with Wildlife

Homeowners must accept the responsibility of living with wildlife and must be responsible for protecting their vegetation from damage, confining their pets, and properly storing garbage, pet food, livestock feed and other potential attractants. Homeowners must be aware of potential problems associated with the occasional presence of wildlife such as deer, black bear, mountain lion, coyote, fox, skunk, and magpie. Please contact the Montana Fish, Wildlife & Parks office in Missoula (3201 Spurgin Road, Missoula, MT 59804) for brochures that can help homeowners "live with wildlife." Alternatively, see FWP's web site at <a href="https://www.fwp.mt.gov">www.fwp.mt.gov</a>.

The following covenants are designed to help minimize problems that homeowners could have with wildlife, as well as helping homeowners protect themselves, their property and the wildlife that Montanans value.

- a. Homeowners must be aware of the potential for **vegetation damage by wildlife**, particularly from deer feeding on green lawns, gardens, flowers, ornamental shrubs and trees in this subdivision. Homeowners should be prepared to take the responsibility to plant non-palatable vegetation or protect their vegetation (fencing, netting, repellents) in order to avoid problems. Also, consider landscaping with native vegetation that is less likely to suffer extensive feeding damage by deer.
- b. Gardens, fruit trees or orchards can attract wildlife such as bear and deer. Keep produce and fruit picked and off the ground, because ripe or rotting fruit or organic material can attract bears, skunks and other wildlife. To help keep wildlife such as deer out of gardens, fences should be 8 feet or taller. The top rail should be made of something other than wire to prevent wildlife from entanglement. Netting over gardens can help deter birds from eating berries. To keep wildlife such as bears out of gardens and/or away from fruit trees, use properly constructed electric fences and maintain these constantly. (Contact FWP for information on "all-species electric fencing" designed to exclude wildlife from gardens and/or home areas.)
- c. Garbage should be stored in secure animal-resistant containers or indoors to avoid attracting animals such as bears, raccoons, and other wildlife. If stored indoors, do not set garbage cans out until the morning of garbage pickup and bring them in no later than that evening.
- d. **Do not feed wildlife** or offer supplements (such as salt blocks), attractants, or bait for deer or other wildlife. Feeding wildlife results in unnatural concentrations of animals that could lead to overuse of vegetation and disease transmission. Such actions unnecessarily accustom wild animals to humans, which can be dangerous for both. It is against state law (MCA 87-3-130) to purposely or knowingly attract bears with supplemental food attractants (any food, garbage, or other attractant for game animals) or to provide

supplemental feed attractants in a manner that results in "an artificial concentration of game animals that may potentially contribute to the transmission of disease or that constitutes a threat to public safety." Also, homeowners must be aware that deer might occasionally attract mountain lions to the area.

- e. **Birdseed** is an attractant for bears. If used, bird feeders should: a) be suspended a minimum of 20 feet above ground level, b) be at least 4 feet from any support poles or points, and c) should be designed with a catch plate located below the feeder and fixed such that it collects the seed knocked off the feeder by feeding birds.
- f. Pets must be confined to the house, in a fenced yard, or in an outdoor kennel area when not under the immediate control of the owner, and not be allowed to roam as they can chase and kill big game and small birds and mammals. Under current state law it is illegal for dogs to chase hoofed game animals and the owner may also be held guilty (MCA 87-3-124). Keeping pets confined also helps protect them from predatory wildlife
- g. Pet food and/or livestock feed should be stored indoors, in closed sheds or in animal-resistant containers in order to avoid attracting wildlife such bears, mountain lions, skunks, raccoons, and other wildlife. When feeding pets and/or livestock do not leave food out overnight. Consider feeding pets indoors so that wild animals do not learn to associate food with your home.
- h. Barbecue grills should be stored indoors. Keep all portions of the barbecues clean. Food spills and smells on and near the grill can attract bears and other wildlife.
- i. Consider **boundary fencing** that is no higher than 3-1/2 feet (at the top rail or wire) and no lower than 18 inches (at the bottom rail or wire) in order to facilitate wildlife movement and help avoid animals such as deer becoming entangled in the fence or injuring themselves when trying to jump the fence. Contact FWP for guidelines on "wildlife friendly" fencing.
- j. Compost piles can attract skunks and bears. If used they should be kept indoors or built to be wildlife-resistant. Compost piles should be limited to grass, leaves, and garden clippings, and piles should be turned regularly. Adding lime can reduce smells and help decomposition. Do not add food scraps.
- k. Apiaries (bee hives) could attract bears in this area. (If used, consult Montana Fish, Wildlife & Parks or the U.S. Fish & Wildlife Service for help in planning and constructing an apiary system that will help deter bears.)
- 1. These "living with wildlife" covenants cannot be altered or eliminated without consent of the governing body (Ravalli County Commissioners).

## **EXHIBIT A-2**

#### **David Ohnstad**

From:

David Ohnstad

Sent:

Monday, July 09, 2007 10:29 AM

To:

Vanessa Perry

Cc:

'John Horat'

Subject:

FW: Hamilton Heights, Block 13, Lots A-D

Attachments: Prelim Review Completion 062207.pdf

RECEIVED

\_JUL 0 9 2007

TC-07-07-800 Ravalli County Planning Dept.

#### Vanessa -

Attached please find copy of the preliminary design review report for referenced subdivision. The Road & Bridge Department will approve this preliminary design with the expectation and understanding that all concerns identified through the preliminary review process are appropriately addressed through final design.

I will forward the review completion package to your office.

David

From: Cindy Kuns [mailto:CKuns@wgmgroup.com]

Sent: Friday, June 22, 2007 10:50 AM

To: David Ohnstad

Cc: Vanessa Perry; john@brengineer.myrf.net Subject: Hamilton Heights, Block 13, Lots A-D

We have completed our preliminary review of the above-referenced project. Attached is our completion memo. A hard copy of this memo with all referenced attachments is being mailed.

#### Cindy Kuns

Project Assistant



P.O. Box 16027 • 3021 Palmer Street Missoula • Montana • 59808 E-mail: <u>CKuns@wgmgroup.com</u> 406-728-4611 x120 • FAX: 406-728-2476

http://www.wamgroup.com



### **ENGINEERING** SURVEYING **PLANNING**

3021 Palmer • P.O. Box 16027 • Missoula, Montana 59808-6027

(406) 728-4611

FAX: (406) 728-2476

ceived wgmgroup.com

DATE:

June 22, 2007

TO:

David Ohnstad, Ravalli County Road & Bridge Department

CC:

John Horat, PE, Bitterroot Engineering

Vanessa Perry, Ravalli County Planning Department

FROM:

Jeremy W. Keene, P.E.

RE:

Hamilton Heights, Block 13, Lots A-D Preliminary Review Completion

On behalf of the Ravalli County Road and Bridge Department (RCRBD), we have completed our preliminary review of the above-referenced project. Adequate road, grading, and drainage information has been submitted for the project. If the RCRBD is in concurrence with our review, please forward this letter to the Planning Office to be included with the full subdivision application.

Preliminary comments were sent to the design engineer in accordance with Step 6 on the RCRBD's "Schedule of Activities - Processing & Coordination of Subdivision Projects" form. We are now sending this letter to your office in accordance with Step 7 of the RCRBD's Schedule of Activities to complete our preliminary review of the project.

We have included a copy of the following with this letter:

- 1) Preliminary comment memorandum from WGM Group, dated 4/11/07
- 2) Preliminary comment response from Bitterroot Engineering, dated 05/18/07
- 3) Follow-up comments from WGM Group via email, dated 6/4/07
- 4) Comment response from Bitterroot Engineering, dated 6/16/07, with attachments.

This review is based on the 2004 version of the AASHTO Geometric Design of Highways and Streets, the 2001 version of the AASHTO Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT<400), and the Ravalli County Subdivision Regulations.

Review of the plans and reports are limited to general conformance with the Ravalli County Subdivision Regulations in place at the time the subdivision application was submitted. This is not a complete or comprehensive review of the design assumptions or conclusions of the design professional who submitted the plans and reports. A final set of construction plans will need to be submitted by the developer for review by the RCRBD prior to beginning construction.

Thank you for the opportunity to work with the Ravalli County Road Department. If you have any questions, please contact our office.



3021 Palmer • PO Box 16027 • Missoula, MT 59808-6027

ENGINEERING SURVEYING PLANNING

Phone: (406)728-4611 Fax: (406)728-2476 www.wamgroup.com

DATE:

April 11, 2007

TO:

Vanessa Perry, Ravalli County Planning Department

CC:

John Horat, PE, Bitterroot Engineering

FROM:

Jeremy W. Keene, P.E.

RE:

Hamilton Heights, Block 13, Lots A-D Preliminary Review Comments

On behalf of the Ravalli County Road and Bridge Department (RCRBD), our office has completed a review of the preliminary grading and drainage plans and reports submitted by Bitterroot Engineering for the above-referenced project. This review memorandum is part of Step 6 on the RCRBD's "Schedule of Activities – Processing & Coordination of Subdivision Projects" form. This review is based upon the Ravalli County subdivision regulations, the 2004 version of the AASHTO Geometric Design of Highways and Streets and the 2001 version of the AASHTO Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT<400).

Based on our review, we have the following comments.

### Roadways

1. A pavement design will be necessary for the final design review.

### Storm Drainage

- 1. Please identify offsite flows and delineate the drainage areas considered in the analysis of the property.
- 2. Subdivision regulations require analysis of the 10-year, 1-hour storm to ensure mitigation of this event can be handled on-site. In addition, the 100-year, 1-hour storm event calculations and a plan to mitigate the runoff from this event should be included in the Storm Drainage Report.
- 3. Please ensure that roadways will not be overtopped during the 10-year event.
- 4. Please ensure that runoff calculations and culvert sizing calculations take into account potential runoff from adjacent lots that will be drained using the proposed facilities.
- 5. The typical section for Hidden Arrow lane indicates a 2% cross slope to one side without providing a ditch section. Will this adequately convey the storm drainage without overtopping the road or saturating the roadway section during the 10-year event?
- 6. Please provide soils information for the subject property.
- 7. Please ensure that erosion control measures are shown for final design review to minimize impacts due to runoff.

## Witterroot Engineering & Design, Inc.

May 18, 2007

1180 Eastside Hwy. Corvallis, MT 59828 (406) 961-5634 FAX (406) 961-5654

WGM Group

Attn: Jeremy Keene, PE

PO Box 16027

Missoula, MT 59808

REF: Hamilton Heights, Block 13, Lots A-D, Corvallis, MT.

Dear Jeremy,

Based on the letter dated April 11, 2007, I am providing revised plans and storm drainage report.

Roadways

1. A final pavement design will be provided with the final plans for design review.

Storm Drainage.

- 1. See attached USGS map and revised storm drainage plan. There are no offiste flows anticipated for this site. Offsite water appears to shed around this project and the proposed developed areas.
- 2-4. See revised storm drainage calculations.
- 5. A ditch has now been added to the section.
- 6. See attached SCS data.
- 7. Erosion control measures will be shown for final design purposes.

If you have any questions, please give us a call.

Sincerely,

BITTERROOT ENGINEERING AND DESIGN, INC.

By John C. Horat, PE

MEGETVED)
MAY 2 1 2007

WGM GROUP, INC

### Miranda McCarvel

From:

Jeremy Keene

Sent:

Monday, June 04, 2007 1:57 PM

To:

john@brengineer.myrf.net

Cc:

Trevor Iman; Cindy Kuns; vperry@ravallicounty.mt.gov

Subject: Hamilton Heights, Block 13, Lots A-D

John,

I am reviewing your packet dated 5/18/07. Your basic storm drainage plan looks sounds, but I have a couple questions and clarifications:

- It appears that you only account for the area of the roads in your 10-year storm analysis. Wouldn't runoff from the adjacent lots contribute to the flow in the ditch?
- What happens to the ditches and culverts in the 100-year event? The regs require that you calculate the 100-year event so
  that you can describe whether or not there will be overtopping and what happens to the water if it does.
- I'm assuming that Hidden Arrow Lane shown on the plans is the same as Little Arrow referred to in the storm drainage report.

I will wait for your follow up before finishing my review.

# Jeremy W. Keene, P.E. WGM Group, Inc.

3021 Palmer, PO Box 16027 Missoula, Montana 59808-6027 Phone: (406)728-4611

Fax: (406) 728-2476

070214 CO

## Witterroot Engineering & Design, Inc.

June 16, 2007

1180 Eastside Hwy, Corvallis, MT 59828 (406) 961-5634 FAX (406) 961-5654

WGM Group Attn: Jeremy Keene, PE PO Box 16027 Missoula, MT 59808

REF: Hamilton Heights, Block 13, Lots A-D, Corvallis, MT.

Dear Jeremy,

I revised the storm drainage report based upon the latest emailed comments.

-Lots were now included in the analysis.

-The 100 year calculations are now included along with a narrative of likely disposition of storm water.

-Little Arrow was changed to Hidden Arrow.

If you have any questions, please call or email. Thank you.

Sincerely, BITTERROOT ENGINEERING AND DESIGN, INC.

Joh C. Horest

By John C. Horat, PE



WGM GROUP, INC

## STORM DRAINAGE REPORT FOR AP LOTS A, B, C & D, BLOCK 13, HAMILTON HEIGHTS

located at

A Portion of Section 15 T7N, R20W, Ravalli County, Montana Corvallis, Montana

> prepared 6/16/07 for Marlin Powell

> > Corvallis

By
John Horat, PE
Bitterroot Engineering & Design, Inc.
Job # 5123
1180 Eastside Highway
Corvallis, MT 59828
(406)961-5634 FAX 866-856-3688

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### INTRODUCTION:

This report details the design of a storm drainage plan for a subdivision off of Hamilton Heights Road located southeast of Corvallis. The site is bordered to the south by Hamilton Heights Road, east and west by residential home sites on acreage and north by a gully. A small perennial flow crosses the property in the gully at the northwestern portion of the site. As shown on the attached USGS map, minimal offsite water flows onto the site except at the most northern and southern portions of the site.

The site in its undeveloped state has two (2) distinct drainage areas, north and south. Most of the developed acres will drain to the north. The largest impact to the southern drainage will be the proposed road which will climb the hillside to access the proposed lots. A circular loop road is proposed for the subdivision. The only significant offsite water which enters the project enters the drainage along the northern edge of the property

The storm water basins are sized to contain the 2-year 1-hour event. The roadside ditches and culverts are sized to contain the 10-year 1 hour event from the site. No calculations for offsite storm events are provided since no development activities are proposed where offsite flows pass through the property During the 100 year event, excess storm water will pass through the site in the natural drainages on both the northern and southern boundaries. Based on calculations, the culvert for Hidden Arrow Road will handle the 100 year storm event. There may be some inundation of Hidden Arrow Road. There will likely be overtopping of the interior loop road during the 100 year event since the culvert is not sized for this event. The water will pass through the site in the natural gulley at the northwestern portion of the site. .

This engineering report includes the required information for Circular DEQ 8. The detailed plans can be seen on sheets 1 through 3 for the project.

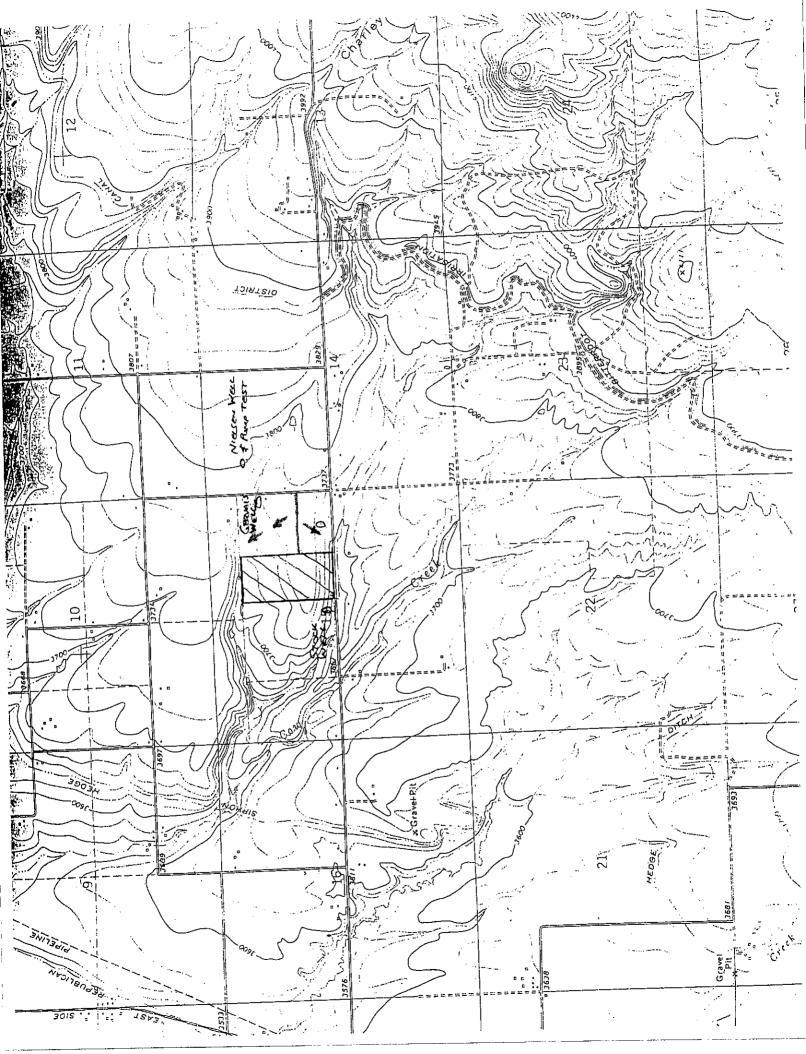
## SUMMARY OF STORM DRAIN DESGIN

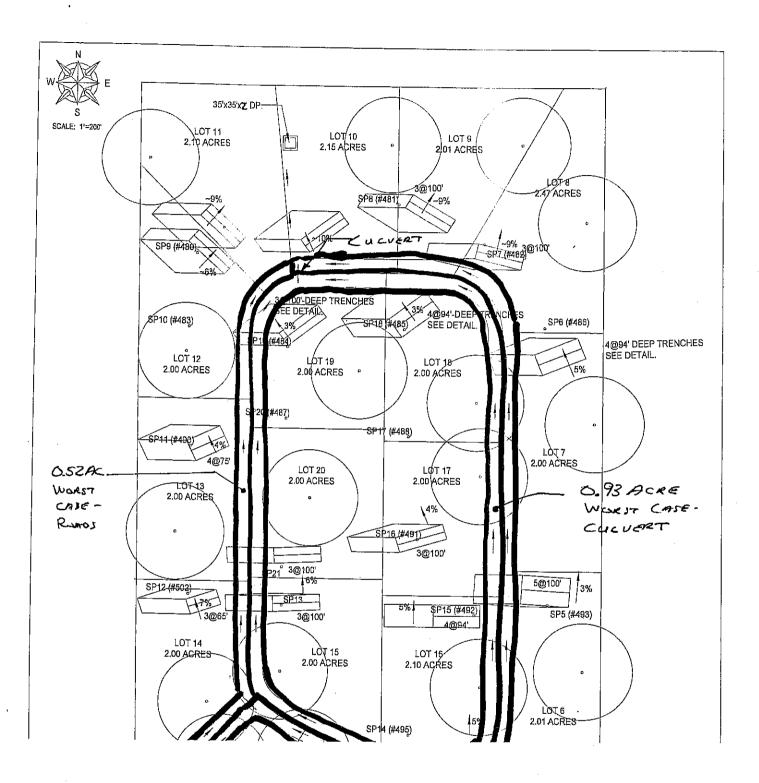
The following improvements are anticipated for the subdivision. Storm water will be transported via roadside swales and culverts. The water will be captured by tuff tite catch basins inlets and transport storm water through pipe to either a detention basin or infiltrator basin.

### MAINTENANCE PLAN

The basins are proposed to be maintained by the Homeowner's Association. The Homeowner's Association will be initially operated by Powell Construction, Inc.

Semiannual maintenance is anticipated to be removal of sediment in roadside ditches and drainage basins. Weed mowing in and around the drainage basins shall be performed to allow for adequate storage capacity in the basins.





### **SPECIFICATIONS**

- 1. Re-seeding of disturbed areas shall be accomplished in accordance with the approved Weed Control Plan.
- 2. Re-seeding of basins and within 20° of basins shall be with native grasses. Areas that do not successfully grow shall be re-seeded to encourage growth which will aid in treatment of storm waters.
- 3. Contractor shall contact Underground Alert prior to any excavations.
- 4. Road construction shall be in conformance with the Ravalli County Subdivision Regulations.
- 6. All cut slopes shall be hydroseeded.

## Typical Lot Drainage Calculations (2 year - 1 hour event)

House and Garage Runoff  $2,500 \text{ s.f.} \times 60\% \times 0.38 \text{ in./12 in./ft.} = 48 \text{ c.f.}$ 

Typical Driveway  $50^{\circ}$  x  $20^{\circ}$  x 60% x .38 in./12 in./ft. = 19 c.f.

Lawn Area  $100^{\circ} \times 50^{\circ} \times -20\% \times .38 \text{ in./12 in./ft.} = 32 \text{ c.f.}$ 

Net Increase Per Lot 48 + 19 - 32 = 35 c.f.

## Area A1 (Northern Portion of Project)

Additional Lot Drainage
15 lots x 35 c.f. = 525 c.f.

Additional Roadways  $3300^{\circ} \times 30^{\circ} \times 60\% \times .38 \text{ in./12 in./ft.} = 1881 \text{ c.f.}$ 

Required Basin Capacity
525 + 1881 c.f. = 2406 c.f.

Try 35' x 35' x 2.0' deep = 2450 c.f. Ok.

## Area A2 (Southern Portion of Project)

Additional Lot Drainage 5 lots x 35 c.f. = 175 c.f.

Additional Roadways  $1300^{\circ} \times 30^{\circ} \times 60\% \times .38$  in./12 in./ft. = 741 c.f.

Required Basin Capacity 175 + 741 c.f. = 916 c.f.

Try 50' x 20' x 1.0' deep = 1,000 c.f. Ok.

### Proposed Roadside Swales

### Worst Case-Loop Road

Onsite 10-year 1 hour storm: i = 0.72

Road area – 0.52 acre

$$Q = c x i x a$$

$$= 0.9 \times 0.72 \times 0.52$$

= 0.34 cfs

### 3 Residences – 6.0 acres

$$Q = c \times i \times a$$

$$= 0.4 \times 0.72 \times 6.0$$

= 1.73 cfs

Total 
$$Q = .34 + 1.73$$

= 2.07 cfs

Side slope in ditch = 0.17

Slope in ditch = 0.025

See printout for flow depth.

### Worst Case-Hidden Arrow

Onsite 10-year 1 hour storm: i = 0.72

Road area – 0.77 acre

$$Q = c \times i \times a$$

$$= 0.9 \times 0.72 \times 0.77$$

= 0.50 cfs

Lot area - no houses - 6.0 acres

$$Q = c x i x a$$

$$= 0.2 \times 0.72 \times 6.0$$

= 0.86 cfs

Total 
$$Q = 0.50 + 0.86$$

= 1.36 cfs

Side slope in ditch = 0.50

Slope in ditch = 0.025

See printout for flow depth.

### **Proposed Culverts**

```
Culvert at Northwest of Loop Road
Onsite 10-year 1 hour storm: i = 0.72
Road area - 0.93 acre
Q = c x i x a
= 0.9 x 0.72 x 0.93
= 0.60 cfs

6 Residences - 12.0 acres
Q = c x i x a
= 0.4 x 0.72 x 12.0
= 3.46 cfs

Total Q = 0.60 + 3.46
= 4.06 cfs

S = 0.01
```

Culvert at Hidden Arrow - South

See printout for flow depth.

Q = 1.36 cfs (See calculations from road side ditch)

S = 0.01

See calculations.

### 100 Year Storm Water Events

Interior Area of Loop Road at Culvert (South Edge)

$$Q = cf x c x i x a$$
  
= 1.25 x 1.14 x ((0.9 x 0.73) + (0.4 x 12.0))  
= 7.78 cfs

Total Area including both sides of road and lots at Culvert (North Edge)

$$Q = cf x c x i x a$$
  
= 1.25 x 1.14 x ((0.9 x 1.86) + (0.4 x 20.0))  
= 13.79 cfs

Hidden Arrow Lane

$$Q = cf x c x i x a$$
  
= 1.25 x 1.14 x ((0.9 x 0.77) + (0.2 x 6.0))  
= 2.70 cfs

HYDRAULIC ELEMENTS - I PROGRAM PACKAGE
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Especially prepared for:
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CHANNEL Z(HORIZONTAL/VERTICAL) = 6.00  BASEWIDTH(FEET) = .00  CONSTANT CHANNEL SLOPE(FEET/FEET) = .025000  UNIFORM FLOW(CFS) = 2.07  MANNINGS FRICTION FACTOR = .0300
NORMAL-DEPTH FLOW INFORMATION:
>>>> NORMAL DEPTH(FEET) = .37  FLOW TOP- WIDTH(FEET) = .4.42  FLOW AREA(SQUARE FEET) = .81

```
HYDRAULIC DEPTH (FEET) = .18

FLOW AVERAGE VELOCITY (FEET/SEC.) = 2.55

UNIFORM FROUDE NUMBER = 1.046

PRESSURE + MOMENTUM (POUNDS) = 16.44

AVERAGED VELOCITY HEAD (FEET) = .101

SPECIFIC ENERGY (FEET) = .469

CRITICAL DEPTH FLOW INFORMATION:

CRITICAL FLOW TOP-WIDTH (FEET) = 4.51

CRITICAL FLOW AREA (SQUARE FEET) = .85

CRITICAL FLOW HYDRAULIC DEPTH (FEET) = .19

CRITICAL FLOW AVERAGE VELOCITY (FEET/SEC.) = 2.45

CRITICAL DEPTH (FEET) = .38

CRITICAL FLOW PRESSURE + MOMENTUM (POUNDS) = 16.42

AVERAGED CRITICAL FLOW VELOCITY HEAD (FEET) = .093

CRITICAL FLOW SPECIFIC ENERGY (FEET) = .468
```

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**************************************
CHANNEL Z(HORIZONTAL/VERTICAL) = 2.00  BASEWIDTH(FEET) = .00  CONSTANT CHANNEL SLOPE(FEET/FEET) = .025000  UNIFORM FLOW(CFS) = 1.36  MANNINGS FRICTION FACTOR = .0300
NORMAL-DEPTH FLOW INFORMATION:
>>>> NORMAL DEPTH(FEET) = .49 FLOW TOP- WIDTH(FEET) = 1.96 FLOW AREA(SOUARE FEET) = .48

```
HYDRAULIC DEPTH (FEET) = .25

FLOW AVERAGE VELOCITY (FEET/SEC.) = 2.83

UNIFORM FROUDE NUMBER = 1.007

PRESSURE + MOMENTUM (POUNDS) = 12.36

AVERAGED VELOCITY HEAD (FEET) = .124

SPECIFIC ENERGY (FEET) = .615

CRITICAL—DEPTH FLOW INFORMATION:

CRITICAL FLOW TOP—WIDTH (FEET) = .48

CRITICAL FLOW AREA (SQUARE FEET) = .48

CRITICAL FLOW HYDRAULIC DEPTH (FEET) = .25

CRITICAL FLOW AVERAGE VELOCITY (FEET/SEC.) = 2.81

CRITICAL DEPTH (FEET) = .49

CRITICAL FLOW PRESSURE + MOMENTUM (POUNDS) = .12.36

AVERAGED CRITICAL FLOW VELOCITY HEAD (FEET) = .122

CRITICAL FLOW SPECIFIC ENERGY (FEET) = .615
```

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**************************************	****
PIPE DIAMETER(FEET) = 1.250 FLOWDEPTH(FEET) = .800 PIPE SLOPE(FEET/FEET) = .0100 MANNINGS FRICTION FACTOR = .013000 >>>> NORMAL DEPTH FLOW(CFS) = 4.78	
NORMAL-DEPTH FLOW INFORMATION:	
NORMAL DEPTH(FEET) = .80  FLOW AREA(SQUARE FEET) = .83  FLOW TOP WIDTH(FEET) = 1.200	

FLOW PRESSURE + MOMENTUM(POUNDS) = 71.40
FLOW VELOCITY(FEET/SEC.) = 5.761
FLOW VELOCITY HEAD(FEET) = .515
HYDRAULIC DEPTH(FEET) = .69
FROUDE NUMBER = 1.221
SPECIFIC ENERGY(FEET) = 1.32

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Advanced Engineering Software [AES] SERIAL No. 105641 REV. 2.0 RELEASE DATE:12/30/82
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**************************************
PIPE DIAMETER(FEET) = 1.000  FLOWDEPTH(FEET) = .800  PIPE SLOPE(FEET/FEET) = .0100  MANNINGS FRICTION FACTOR = .013000  >>>> NORMAL DEPTH FLOW(CFS) = 3.48
NORMAL-DEPTH FLOW INFORMATION:
NORMAL DEPTH(FEET) = .80  FLOW AREA(SQUARE FEET) = .67 +  FLOW TOP WIDTH(FEET) = .800

#### **EXHIBIT A-3**

March 2, 2007

Vanessa Perry Planning Department 215 S 4<sup>th</sup> Street, Suite F Hamilton, MT 59840

Subject: Hamilton Heights, Block 13, Lots A-D, AP Major Subdivision

Dear Vanessa:

Thank you for providing the Ravalli County Parks Board with a preliminary plat for Hamilton Heights, Block 13, Lots A-D. This is a major subdivision with 21 lots on 41.99 acres.

The required recreation land dedication for this subdivision would be approximately two acres. We, however, prefer cash-in-lieu since the remote location and topographic difficulties mean a land dedication would have little general public value.

Please don't hesitate to contact us further if there are questions.

Sincerely,

Alt M. En-

Chairperson

Ravalli County Parks Board

#### **EXHIBIT A-4**

#### National Soil Survey Handbook Farmland Classification 1996

#### (a) Prime farmlands.

- (1) General. Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses (the land could be cropland, pastureland, rangeland, forest land, or other land, but not urban built-up land or water). It has the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops when treated and managed, including water management, according to acceptable farming methods. In general, prime farmlands have an adequate and dependable water supply from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, acceptable salt and sodium content, and few or no rocks. They are permeable to water and air. Prime farmlands are not excessively erodible or saturated with water for a long period of time, and they either do not flood frequently or are protected from flooding. Examples of soils that qualify as prime farmland are Palouse silt loam, 0 to 7 percent slopes; Brookston silty clay loam, drained; and Tama silty clay loam, 0 to 5 percent slopes.
- (2) Specific criteria. Prime farmlands meet all the following criteria: Terms used in this section are defined in USDA publications: "Soil Taxonomy, Agriculture Handbook 436"; "Soil Survey Manual, Agriculture Handbook 18"; "Rainfall-erosion Losses From Cropland, Agriculture Handbook 282"; "Wind Erosion Forces in the United States and Their Use in Predicting Soil Loss, Agriculture Handbook 346"; and "Saline and Alkali Soils, Agriculture Handbook 60."

#### (i) The soils have:

- (a) Aquic, udic, ustic, or xeric moisture regimes and sufficient available water capacity within a depth of 40 inches (1 meter), or in the root zone (root zone is the part of the soil that is penetrated or can be penetrated by plant roots) if the root zone is less than 40 inches deep, to produce the commonly grown cultivated crops (cultivated crops include, but are not limited to, grain, forage, fiber, oilseed, sugar beets, sugarcane, vegetables, tobacco, orchard, vineyard, and bush fruit crops) adapted to the region in 7 or more years out of 10; or
- (b) Xeric or ustic moisture regimes in which the available water capacity is limited, but the area has a developed irrigation water supply that is dependable (a dependable water supply is one in which enough water is available for irrigation in 8 out of 10 years for the crops commonly grown) and of adequate quality; or,
- (c) Aridic or torric moisture regimes, and the area has a developed irrigation water supply that is dependable and of adequate quality; and,
- (ii) The soils have a temperature regime that is frigid, mesic, thermic, or hyperthermic (pergelic and cryic regimes are excluded). These are soils that, at a depth of 20 inches (50 cm), have a mean annual temperature higher than 32 deg. F (0 deg. C). In addition, the mean summer temperature at this depth in soils with an O horizon is higher than 47 deg. F (8 deg. C); in soils that have no O horizon, the mean summer temperature is higher than 59 deg. F (15 deg. C); and,
- (iii) The soils have a pH between 4.5 and 8.4 in all horizons within a depth of 40 inches (1 meter) or in the root zone if the root zone is less than 40 inches deep; and,
- (iv) The soils either have no water table or have a water table that is maintained at a sufficient depth during the cropping season to allow cultivated crops common to the area to be grown; and,
- (v) The soils can be managed so that, in all horizons within a depth of 40 inches (1 meter) or in the root zone if the root zone is less than 40 inches deep, during part of each year the conductivity of the saturation extract is less than 4 mmhos/cm and the exchangeable

sodium percentage (ESP) is less than 15; and,

- (vi) The soils are not flooded frequently during the growing season (less often than once in 2 years); and,
- (vii) The product of K (erodibility factor) x percent slope is less than 2.0, and the product of I (soils erodibility) x C (climatic factor) does not exceed 60; and
- (viii) The soils have a permeability rate of at least 0.06 inch (0.15 cm) per hour in the upper 20 inches (50 cm) and the mean annual soil temperature at a depth of 20 inches (50 cm) is less than 59 deg. F (15 deg. C); the permeability rate is not a limiting factor if the mean annual soil temperature is 59 deg. F (15 deg. C) or higher; and,
- (ix) Less than 10 percent of the surface layer (upper 6 inches) in these soils consists of rock fragments coarser than 3 inches (7.6 cm).

Montana Supplemental Criteria: The soils have 4 inches or more of available water holding capacity within a depth of 40 inches (1 meter). AWC is calculated as the accumulated mean from the MUIR data.

#### (b) Unique farmland.

- (1) General. Unique farmland is land other than prime farmland that is used for the production of specific high value food and fiber crops. It has the special combination of soil quality, location, growing season, and moisture supply needed to economically produce sustained high quality and/or high yields of a specific crop when treated and managed according to acceptable farming methods. Examples of such crops are citrus, tree nuts, olives, cranberries, fruit, and vegetables.
- (2) Specific characteristics of unique farmland.
  - (i) Is used for a specific high-value food or fiber crop.
  - (ii) Has a moisture supply that is adequate for the specific crop. The supply is from stored moisture, precipitation, or a developed irrigation system.
  - (iii) Combines favorable factors of soil quality, growing season, temperature, humidity, air drainage, elevation, aspect, or other conditions, such as nearness to market, that favor the growth of a specific food or fiber crop.

#### (c) Additional farmland of statewide importance.

This is land, in addition to prime and unique farmlands, that is of statewide importance for the production of food, feed, fiber, forage, and oil seed crops. Criteria for defining and delineating this land are to be determined by the appropriate state agency or agencies. Generally, additional farmlands of statewide importance include those that are nearly prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some may produce as high a yield as prime farmlands if conditions are favorable. In some states, additional farmlands of statewide importance may include tracts of land that have been designated for agriculture by state law.

#### Montana Farmland of Statewide Importance Criteria:

- 1. Product of C (climatic factor) x I (soils erodibility) is less than 80.
- 2. Product of Kw (erodibility factor) x maximum slope is less than or equal to 3.
- 3. Frost free season is greater than 70 days.
- 4. Not frequently flooded during the growing season.
- 5. Depth to water table is greater than or equal to 24 inches.
- 6. Surface layer is not cobbly or stony (<15% by volume rock fragments greater than 3 inches).
- 7. Available water holding capacity in the upper 40 inches is  $\geq 3.75$  inches.
- 8. pH is  $\leq 9.0$  in upper 40 inches.
- 9. EC (electrical conductivity) is  $\leq 4$  in upper 24 inches and  $\leq 8$  from 24 to 40 inches.
- 10. SAR (sodium adsorption ratio ) is < 13 in upper 24 inches.
- 11. Permeability of the upper 20 inches is not slow or very slow.

#### (d) Additional farmland of local importance.

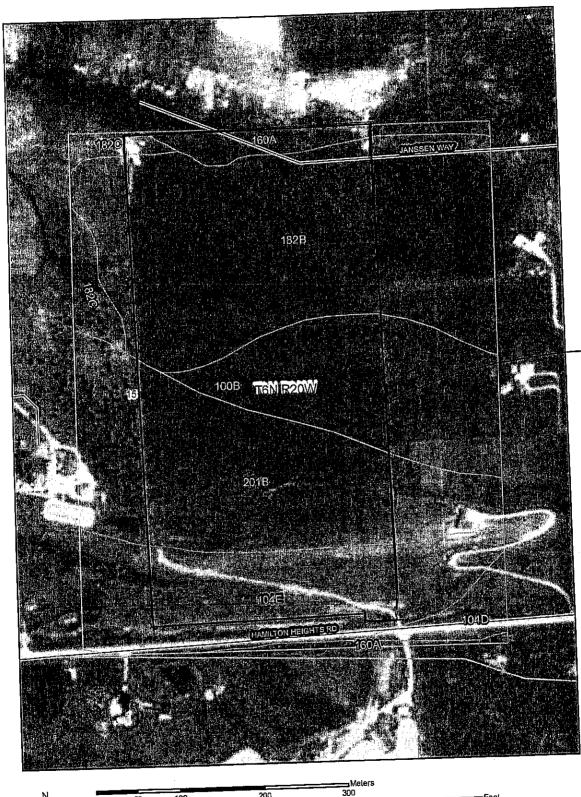
In some local areas, there is concern for certain additional farmlands for the production of food, feed, fiber, forage, and oilseed crops, even though these lands are not identified as having national or statewide importance. Where appropriate, these lands are to be identified by the local agency or agencies concerned. In places, additional farmlands of local importance may include tracts of land that have been designated for agriculture by local ordinance.

This is an example of possible crirteria for farmland of local importance, but as of 3/28/2006 Ravalli County has not adopted any criteria for the county to use to evaluate farmlands of local importance.

The soil map unit is not already designated as Prime Farmland, Prime Farmland if irrigated, or Farmland of Statewide Importance and has one or more of the following:

1. Soil map units that have 50% or more named components meeting prime or statewide criteria.

- 2. Soil map units that have slopes less than 15%, are not frequently flooded, are poorly drained or better, and where at least 50% of the named components meet at least one of the following yields:
  - a. Spring wheat  $\geq$  30 bushels per non-irrigated acre
  - b. Alalfa hay  $\geq 4$  tons per irrigated acre
  - c. Grass ha ≥ 3 tons per irrigated acre
  - d. Pasture (AUM)  $\geq 1$  per acre, non-irrigated;  $\geq 5$  per acre, irrigated



apportmate property boundary



Natural Resources Conservation Service

Web Soil Survey 2.0 National Cooperative Soil Survey

1,000

200

500

100

250

50

## MAP LEGEND

∴ Very Story Spot     ▼ Wet Spot	A Other	Special Line Features	S. Gully	Short Steep Slope	Other	Political Features	Public Land Survey	Township and Range	Section	Municipalities	Oities	Urban Areas	Water Features	Oceans	Streams and Canals	Transportation	Rails Rails	Roads	interstate Highways	, DS Routes	State Highways	Local Roads	Other Roads	
Area of Interest (AOI) Area of Interest (AOI)	Soils	Soil Map Units	Special Point Features	(3) Blowouf	☑ Borrow Pit	Clay Spot	🛊 Closed Depression		Gravelly Spot	Ø Landfill				Mine or Quarry	Miscellaneous Water	<ul><li>Perennial Water</li></ul>	😽 Rock Outarop	+ Saline Spot	Sandy Spot	Severely Eroded Spot	Sinkhole	Side or Sip	Sodic Spot	Spoil Area

# MAP INFORMATION

Original soil survey map sheets were prepared at publication scale. Viewing scale and printing scale, however, may vary from the original. Please rely on the bar scale on each map sheet for proper map measurements.

Source of Map: Natural Resources Conservation Service Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov Coordinate System: UTM Zone 11N

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Bitterroot Valley Area, Montana Survey Area Data: Version 7, Jun 12, 2007

Date(s) aerial images were photographed: 7/31/1995

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Stony Spot

⇔

#### Map Unit Legend

	Bitterroot Valley Are	ea, Montana (MT645)				
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI			
100B	Burnt Fork loam, 0 to 4 percent slopes	11.3	14.7%			
104D	Farnuf-Bitterroot-Haccke complex, 4 to 15 percent slopes	1.6	2.1%			
104E	Farnuf-Bitterroot-Subwell complex, 15 to 40 percent slopes	13.4	17.3%			
160A	Riverrun-Gash-Curlew complex, 0 to 2 percent slopes	2.9	3.8%			
182B	Quast-Haccke complex, 0 to 4 percent slopes	26.8	34.6%			
182C	Quast-Haccke complex, 4 to 8 percent slopes	2,3	2.9%			
201B	Burnt Fork cobbly loam, 1 to 4 percent slopes	19.1	24.7%			
Totals for Area of Interest (AOI)		77.4	100.0%			

## Prime and other Important Farmlands

This table lists the map units in the survey area that are considered important farmlands. Important farmlands consist of prime farmland, unique farmland, and farmland of statewide or local importance. This list does not constitute a recommendation for a particular land use.

In an effort to identify the extent and location of important farmlands, the Natural Resources Conservation Service, in cooperation with other interested Federal, State, and local government organizations, has inventoried land that can be used for the production of the Nation's food supply.

Prime farmland is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil quality, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. The water supply is dependable and of adequate quality. Prime farmland is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

For some of the soils identified in the table as prime farmland, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures.

A recent trend in land use in some areas has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

Unique farmland is land other than prime farmland that is used for the production of specific high-value food and fiber crops, such as citrus, tree nuts, olives, cranberries, and other fruits and vegetables. It has the special combination of soil quality, growing season, moisture supply, temperature, humidity, air drainage, elevation, and aspect needed for the soil to economically produce sustainable high yields of these crops when properly managed. The water supply is dependable and of adequate quality. Nearness to markets is an additional consideration. Unique farmland is not based on national criteria. It commonly is in areas where there is a special microclimate, such as the wine country in California.

In some areas, land that does not meet the criteria for prime or unique farmland is considered to be farmland of statewide importance for the production of food, feed, fiber, forage, and oilseed crops. The criteria for defining and delineating farmland of statewide importance are determined by the appropriate State agencies. Generally, this land includes areas of soils that nearly meet the requirements for prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some areas may produce as high a yield as prime farmland if conditions are favorable. Farmland of statewide importance may include tracts of land that have been designated for agriculture by State law.

In some areas that are not identified as having national or statewide importance, land is considered to be *farmland of local importance* for the production of food, feed, fiber, forage, and oilseed crops. This farmland is identified by the appropriate local agencies. Farmland of local importance may include tracts of land that have been designated for agriculture by local ordinance.

## Report—Prime and other Important Farmlands

	Prime and other Important Farmlands—Bitterroot	Farmland Classification
Map Symbo	ol Map Unit Name	
100B	Burnt Fork loam, 0 to 4 percent slopes	Prime farmland if irrigated
	Farnuf-Bitterroot-Haccke complex, 4 to 15 percent slopes	Farmland of local importance
104D	Famuf-Bitterroot-Subwell complex, 15 to 40 percent slopes	Not prime farmland
104E	Riverrun-Gash-Curiew complex, 0 to 2 percent slopes	Not prime farmland
160A		Farmland of local importance
182B	Quast-Haccke complex, 0 to 4 percent slopes	Farmland of local importance
182C	Quast-Haccke complex, 4 to 8 percent slopes	
201B	Burnt Fork cobbly loam, 1 to 4 percent slopes	Farmland of local importance

#### **Data Source Information**

Soil Survey Area: Bitterroot Valley Area, Montana Survey Area Data: Version 7, Jun 12, 2007

## Roads and Streets, Shallow Excavations, and Lawns and Landscaping

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. This table shows the degree and kind of soil limitations that affect local roads and streets, shallow excavations, and lawns and landscaping.

The ratings in the table are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

Information in this table is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this table. Local ordinances and regulations should be considered in planning, in site selection, and in design.

## Report—Roads and Streets, Shallow Excavations, and Lawns and Landscaping

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The table shows only the top five limitations for any given soil. The soil may have additional limitations]

Map symbol and soil name	Pct. of map unit	Local roads and st	reets	Shallow excavat	ions	Lawns and landscaping		
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and Valimiting features	alue	
100B—Burnt Fork loam, 0 to 4 percent siopes								
Burnt fork	75	Somewhat limited		Very limited		Not limited		
		Frost action	0.50	Cutbanks cave	1.00			

Subwell   Some state   Store	ting class and niting features	Value	Rating class and limiting features	Value	Rating class and	Value
Bitterroot-Hacke complex, 4 to 15 percent slopes  Farnuf 50 Some Frost Slope  Bitterroot 25 Some Frost Slope  Hacke 15 Very Low Frost Shrint  104E—Farnuf-Bitterroot-Subwell complex, 15 to 40 percent slopes  Farnuf 50 Very Slope  Bitterroot 20 Very Slope  Bitterroot 20 Very Slope  Subwell 20 Very Slope  Subwell 20 Very Slope  Frost Slope  Slope  Slope  Frost Slope  Frost Slope  Frost Slope  Slope  Frost Slope  Slope  Frost Slope  Frost Slope  Slope  Frost Slope  Frost Slope  Slope  Frost Slope  Frost Slope  Frost Slope  Slope  Frost Slope  Slope  Frost Slope  Frost Slope  Slope  Frost Slope  Frost Slope  Frost Slope  Slope  Slope  Slope  Frost Slope  Slope  Frost Slope  Slope  Frost Slope  Slope  Frost Slope  Fros	ewhat limited				limiting features	
Bitterroot 25 Some  Frost Slope Frost Slope Frost Slope Frost Slope Slope Low Frost Shrin 104E—Farnuf- Bitterroot-Subwell complex, 15 to 40 percent slopes Farnuf 50 Very Slope Frost Slope Frost Slope Frost Slope Frost Shrin Slope Frost Slope Frost Slope Frost Shrin Slope Frost Slope Slope Frost Slope Slope Frost Slope Slope Frost Slope Slop	ewhat limited					
Bitterroot 25 Some Frost Frost Slope Haccke 15 Very Low Frost Shrin 104E—Farnuf- Bitterroot-Subwell complex, 15 to 40 percent slopes Farnuf 50 Very Slope Frost Slope Frost Shrin 20 Very Slope Frost			Somewhat limited		Somewhat limited	
Bitterroot   25   Some   Frost	t action	0.50	Cutbanks cave		Slope	0.09
Haccke 15 Very Low Fros Shrin 104E—Farnuf- Bitterroot-Subwell complex, 15 to 40 percent slopes Famuf 50 Very Slop Fros Slop Fros Subwell 20 Very Subwell 20 Very Subwell 20 Very	e	0.09	Slope		Large stones content	0.08
Haccke 15 Very Low Fros Shris 104E—Farnuf- Bitterroot-Subwell complex, 15 to 40 percent slopes Famuf 50 Very Slop Fros Bitterroot 20 Very Slop Fros Subwell 20 Very Subwell 20 Very	ewhat limited		Very limited	41 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Somewhat limited	1,10
Haccke 15 Very Low Fros Shrin 104E—Farnuf- Bitterroot-Subwell complex, 15 to 40 percent slopes Farnuf 50 Very Slop Fros Bitterroot 20 Very Slop Fros Subwell 20 Very Subwell 20 Very Subwell 20 Very	t action	0,50	Cutbanks cave	1,00	Depth to cemented pan	0.84
Haccke 15 Very Low Fros Shrin 104E—Farnuf- Bitterroot-Subwell complex, 15 to 40 percent slopes Farnuf 50 Very Slop Fros Bitterroot 20 Very Fros Subwell 20 Very Subwell 20 Very Subwell 20 Very		0,09	Depth to thin cemented pan	0.84	Droughty	0.12
Low Fros Shrin  104E—Farnuf- Bitterroot-Subwell complex, 15 to 40 percent slopes  Farnuf 50 Very Slop Fros Bitterroot 20 Very Subwell 20 Very Subwell 20 Very Silop Fros Subwell Fros Subwell Fros Subwell Fros Silop Fros Subwell Fros Silop Fros Subwell Fros Subwell Fros Silop Fros			Slope	0.09	Slope	0.09
Fros Shrist 104E—Farnuf—Bitterroot-Subwell complex, 15 to 40 percent slopes  Famuf 50 Very Slope Fros Slope Fros Slope Subwell 20 Very Slope Subwell 20 Very Slope Fros Subwell Fros Slope Fros Fros Subwell Fros Slope Fros Shrist Slope Fros Fros Slope Fros Fr	limited		Somewhat limited		Very limited	
Shring Shring Shring Shring Shring Shring Sitemoot-Subwell complex, 15 to 40 percent slopes  Famuf 50 Very Slope From Slope Slope Slope Slope Slope Subwell 20 Very Slope Subwell Subwell Slope Slope Shring Shope Shring Shope Subwell Slope Shring Shope Shope Shring	strength	1.00	Cutbanks cave	0.10	Sodium content	1.00
104E—Farnuf- Bitterroot-Subwell complex, 15 to 40 percent slopes  Famuf 50 Very Slop Frost Bitterroot 20 Very Slop Frost Subwell 20 Very Subwell 20 Very Silop Frost	st action	0.50			Large stones content	0.05
Bitterroot-Subwell complex, 15 to 40 percent slopes  Famuf 50 Very Slope  Bitterroot 20 Very Slope  Subwell 20 Very Slope  Subwell 20 Very Slope  Subwell 50 Very Slope  From Subwell 50 Very Slope  Subwell 50 Very Slope  From Subwell 50 Very Slope  Subwell 50 Very Slope  From Subwell 50 Very Slope  Subwell 50 Very Slope  From Subwell 50 Very Slope  Subwell 50 Very Slope  From Subwell 50 Very Slope  Subwell 50 Very Slope  From Subwell 50 Very Slope  Subwell	nk-swell	0.01				<u> </u>
Slop Fros Bitterroot 20 Ver Slop Fros Slop Fros Slop Fros Slop Fros Subwell 20 Ver						
Bilterroot 20 Ven Slop Fros Subwell 20 Ver Slop Fros Subwell 50 Ver Slop Fros	y limited		Very limited		Very limited	4.00
Bitterroot 20 Very Slop From Subwell 20 Very Slop From S	oe	1.00	Slope	1.00	<del> `</del>	1.00
Subwell 20 Ver Slo	st action	0.50		0.10	-  <del> </del>	0.01
Subwell 20 Ver Slo	y limited		Very limited		Very limited	
Subwell 20 Ver Slo	pe	1.00		1.00	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	1.0
Subwell 20 Ver Slo	st action	0.50		1,00	pan	0.8
Slo Fro				0.84		0.1
Fro	ry limited		Very limited		Very limited	10
	pe		Slope		Slope	1.0
106F—Riverside	ost action	0.50	Cutbanks cave	1.00	Large stones content	0.6
106F—Riverside					Droughty	0.0
cobbly sandy loam, 15 to 35 percent slopes						
	ry limited		Very limited		Very limited	
Sic	ope	1.0	O Slope	1.0		1.0
			Cutbanks cave	1.0	0 Droughty	1.

	Pct. of	Local roads and str		and Landscaping—Bit Shallow excavatio		Lawns and landscap	ing
Map symbol and soil name	map	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
60A—Riverrun- Gash-Curlew complex, 0 to 2 percent slopes						Very limited	
Riverrun	40	Somewhat limited		Very limited			1.00
		Flooding	0.20	Cutbanks cave	1.00	Droughty	0.05
				Depth to saturated zone	0.99	Large stones content	
Gash	35	Somewhat limited		Very limited		Somewhat limited	
<u> </u>		Frost action	0.50	Cutbanks cave	1.00	Droughty	0.36
		Jestina da la		Depth to saturated zone	0.49		
0	25	Very limited		Very limited		Very limited	<u> </u>
Curlew	25	Depth to saturated	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
<del>-:</del>		Frost action	0.50	Cutbanks cave	1.00	Droughty	0.01
		Flooding	0.40	<del> </del>	<del>                                     </del>		
182B—Quast-Haccke complex, 0 to 4 percent slopes							
Quast	70	Somewhat limited		Somewhat limited		Not limited	ļ
		Low strength	0.78	Cutbanks cave	0.10		<b>_</b>
	<del> </del>	Frost action	0.50				
Haccke	20	Very limited		Somewhat limited		Very limited	
		Low strength	1.0	Cutbanks cave	0.1		1.00
		Frost action	0.5	D		Large stones content	0.0
	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	Shrink-swell	0,0	i			
182C—Quast-Haccke complex, 4 to 8 percent slopes							
Quast	7	0 Somewhat limited		Somewhat limited		Somewhat limited	<u> </u>
-		Low strength	0.7	'8 Cutbanks cave	0.1	D Large stones content	0.0
		Frost action	0.5	50			
Haccke		0 Very limited		Somewhat limited		Very limited	
HAUNE	egal yezho <u>f</u> en komarro	Low strength	1.0	+ + + · · · · · · · · · · · · · · · · ·	o.	10 Sodium content	1.0
		Frost action	0.1			Large stones conten	t 0.0
		Shrink-swell		01			

Map symbol and soll name		Local roads and s		Shallow excavati	ons	/alley Area, Montana Lawns and landscaping		
	map unit	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	
2018—Burnt Fork cobbly loam, 1 to 4 percent slopes							<u> </u>	
Burnt fork	85	Somewhat limited		Very limited		Somewhat limited	}	
	- 00	Frost action	0.50	Cutbanks cave	1.00	Large stones content	0.9	

#### **Data Source Information**

Soil Survey Area: Bitterroot Valley Area, Montana Survey Area Data: Version 7, Jun 12, 2007

#### **Dwellings and Small Commercial Buildings**

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. This table shows the degree and kind of soil limitations that affect dwellings and small commercial buildings.

The ratings in the table are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Information in this table is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this table. Local ordinances and regulations should be considered in planning, in site selection, and in design.

## Report—Dwellings and Small Commercial Buildings

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The table shows only the top five limitations for any given soil. The soil may have additional limitations]

Map symbol and soil	Pct. of	Dwellings without bas	ements	Dwellings with base	ments	Small commercial but	ldings
name	map unit	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
100B—Burnt Fork loam, 0 to 4 percent slopes							
Burnt fork	75	Not limited		Not limited		Not limited	
104D—Farnuf- Bitteπoot-Haccke complex, 4 to 15 percent slopes							
Farnuf	50	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.09	Slope	0.09	Slope	1.0
Bitterroot	25		1.649	Somewhat limited		Very limited	
		Slope	0.09	Depth to thin cemented pan	0.84		1,0
				Slope	0.09		
Haccke	15	Somewhat limited	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Not limited		Somewhat limited	<u> </u>
1100110	ļ -	Shrink-swell	0.01			Slope	0.5
	-				1	Shrink-swell	0.0

Map symbol and soil	Pct. of	Dwellings without base	ements	Dwellings with baser	nents	Small commercial bui	ldings
name	map unit	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
04E—Farnuf- Bitterroot-Subwell complex, 15 to 40 percent slopes							
Farnuf	50	Very limited		Very limited		Very limited	1 00
		Slope	1.00	Slope	1.00	Slope	1.00
Bitterroot	20	Very limited		Very limited		Very limited	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
	11 21	in a je	al e	Depth to thin cemented pan	0,84		
Subwell	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
106E—Riverside cobbly sandy loam, 15 to 35 percent slopes				,			
Riverside	85	Very limited		Very limited		Very limited	
	<u> </u>	Slope	1.00	Slope	1.00	Slope	1.00
160A—Riverrun- Gash-Curlew complex, 0 to 2 percent slopes							
Riverrun	40	Very limited		Very limited		Very limited	<u> </u>
	1	Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.99		
Gash	3	5 Not limited		Somewhat limited		Not limited	
				Depth to saturated zone	0.4		
Curlew	2	5 Very limited		Very limited		Very limited	<u> </u>
		Flooding	1.0	D Flooding	1.0	0 Flooding	1.0
		Depth to saturated zone	1.0	Depth to saturated zone	1.0	Depth to saturated zone	1.0
182B—Quast-Haccke complex, 0 to 4 percent slopes	3						
Quast	7	70 Not limited		Not limited	1 1 1 1 1 1	Not limited	
Haccke		20 Somewhat limited	i, Period	Not limited		Somewhat limited	

	<del></del> -	Dwellings without basements		lings- Bitterroot Valley Area, N Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value :
182C—Quast-Haccke complex, 4 to 8 percent slopes					 	Somewhat limited	
Quast	70	Not limited		Not limited	ļ		
						Slope	0.50
		Somewhat limited		Not limited		Somewhat limited	
Haccke	20		0.01			Slope	0.50
		Shrink-swell	0,01	ļ		Shrink-swell	0.01
201B—Burnt Fork cobbly loam, 1 to 4 percent slopes							
Burnt fork	85	Not limited		Not limited	<u> </u>	Not limited	

#### **Data Source Information**

Soil Survey Area: Bitterroot Valley Area, Montana

Survey Area Data: Version 7, Jun 12, 2007

#### **EXHIBIT A-5**

MAR & ACCA TO CA-CB SEA

## CORVALLIS RURAL FIRE DISTRICT IMPACT FEES

The Corvallis Rural Fire District has established the following requirements for new purposed subdivisions within its district. The requirements were established with consideration for life, safety of the residents of the district, as well as the Volunteers who are called upon to protect the district, and to mitigate harm to the public health and environment.

When establishing the requirements, emphasis was given to the Uniform Fire Code, Articles 9 and 10, and Appendix III-A, the Ravalli County Subdivision Regulations, the Ravalli County Road Department standards, and the 1993 Fire Protection Guidelines for Wildland Residential Interface Development. These Publications and Articles establish rules for dealing with fire apparatus access roads, fire department access to buildings, water supplies for fire protection, installation and maintenance of fire protection systems, and clearance of brush and vegetative growth from roadways.

Consideration was also given to Section 23.7.105 Administrative Rules of Montana, which is adopted pursuant to authority of 50-3-102 (2) and 50-3-103, MCA, which incorporates by reference the UFC (Uniform Fire Code) and establishes a minimum fire prevention code for Montana.

Every effort has been made to use words and phrases consistent with their definitions in the above mentioned publications.

Development Name: A.P. Lot 1, Blk 9, Sunnyside Orchards #3 (3rd Submittal)

Number of Lots: 3
Developer(s) Name: 7

The Fire Department requires that all roads and bridges meet or exceed, and are maintained to, the requirements of the Uniform Fire Code (UFC) Section 902, which reads in part:

902.2.1 Required Access: Fire apparatus shall be provided in accordance with Sections 901 and 902.2 for every facility, building, or portion of a building hereafter constructed or moved into or within the jurisdiction when any portion of the facility or any portion of an exterior wall of the first story of the building is located more than 150 feet (45,720 mm) from fire apparatus access, as measured by an approved route around the exterior of the building or facility...

EXCEPTIONS: When buildings are completely protected with an approved automatic sprinkler system, the provisions of Sections 902.2.1 and 902.2.2 may be modified by the Chief.

- 902.2.2.1 Dimensions. Fire apparatus access roads shall have an unobstructed width of no less than 20 feet (6096 mm) and an unobstructed vertical clearance of no less than 13 feet 6 inches (4115 mm).
- 902.2.2.2 Surface. Fire apparatus access roads shall be designed and maintained to support the imposed loads of fire apparatus, and shall be provided with a surface to provide all-weather driving capabilities.
- 902.2.2.6 Grade. The gradient for a fire apparatus access road shall not exceed the maximum approved by the Chief. {The Chief accepts the Resolution approved by the Board of County Commissioners of Ravalli County. The Resolution sets the maximum acceptable road grade by the County for dedication and maintenance at six percent (6%).}

While not all parts of the UFC Section 902 are listed above, it is the responsibility of the Subdivision Developer to construct and maintain all fire apparatus access roads to comply with all aspects of the UFC and Ravalli County Standards.

#### SPECIFIC REQUIREMENTS:

The Fire District requires that all lots (premises) meet the requirements of UFC 901.4.4 as soon as construction begins with a temporary or permanent address posted at the premises driveway and upon occupancy with a permanent address posted in accordance with the above UFC. It appears that the access to all lots will be adequate if built as submitted.

#### WATER SUPPLY REQUIREMENTS:

The water supply required by the Uniform Fire Code for one or two family dwellings, not exceeding 3600 square feet, requires a flow rate of 1000 g.p.m. The code does not specify the duration of flow for one and two family dwellings; however, the Fire Protection Guidelines for Wildland Residential Interface Development and the Ravalli County Subdivision Regulations list the minimum water supply of 2500 gallons per lot.

The Corvallis Rural Fire District currently has an ISO Class 5 Residential rating which requires a water flow of 200 gallons per minute for a duration of 20 minutes, or a total flow of 4000 gallons per residence.

Considering the above information, the Fire District will accept a water supply of 1000 gallons per minute or 2500 gallons per lot of stored water. The water supply installation, upkeep and maintenance will be the responsibility of the Subdivision.

The Fire District realizes the financial burden of installing and maintaining a water supply and/or storage tanks capable of providing the required water flows, and is willing to accept a payment of \$500.00 (Five Hundred Dollars) per lot, in lieu of the water supply required by the UFC. The payment per lot must be paid upon approval of the Subdivision. The Fire District will then, upon its elective, purchase fire fighting apparatus or develop water supplies.

EXCEPTIONS: When buildings are completely protected with an automatic sprinkler system approved by the Chief, the above listed water supply may be reduced by 50%. The Subdivision Covenants must state that "All residences constructed within the Subdivision be completely protected with an approved automatic sprinkler system." The Fire District will provide a \$250.00 reimbursement to those residences with an approved automatic sprinkler system.

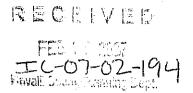
Chairperson Dat

#### Corvanis School District #1

P.O. Box 700 / 1045 Main Corvallis, MT 59828

Phone: (406) 961-4211

Fax: (406) 961-5144



Daniel B. Sybrant

Superintendent 961-4211

Trevor Laboski

Principal High School 961-3201

Jason Wirt

Assistant Principal High School 961-3201

Tom A. Miller

Principal Middle School 961-3007

Rich Durgin

Assistant Principal Middle School 961-3007

Janice Stranahan

Principal Primary School 961-3261

Virginia Haines

Special Services Director 961-3201

Russ Hendrickson

Technology Coordinator 961-3201

Vannesa Bargfrede

Business Manager District Clerk 961-4211 February 14, 2007

**EXHIBIT A-6** 

Ravalli County Planning Office 215 South 4th Street Suite F Hamilton Mt 59840

Dear Planning Department,

I have reviewed your letter in regards to the proposed major subdivision. The application is for a 21-lot subdivision on 41.99 acres off Hamilton Heights Road, Block 13, Lots A-D, AP major subdivision in Ravalli County.

We have no specific objection to this subdivision. As we have stated before, growth in student numbers continues to affect our district infrastructure and bussing system.

In general, we ask that appropriate student safety measures be considered when designing this subdivision. We also ask that you consider a reasonable per lot donation to the school district to help mitigate the impact on our school.

Sincerely,

Daniel B. Sybrant

dbs/lh

#### EXHIBIT A-7

#### Randy Fifrick

From:

Wyrwas, Mike - Billings, MT [mike.wyrwas@usps.gov]

Sent:

Friday, June 29, 2007 9:26 AM

To:

Randy Fifrick

Subject: RE: Mail Delivery Options for New Subdivsions

#### Randy:

We are on the same page in regards to mail delivery options for new subdivisions, with the following exceptions:

1) If a subdivision has less than eight (8) lots, centralized delivery may be required if the entrance to a subdivision is a private road or the local post office feels that a CBU is more efficient than a row of rural mail boxes.

3) CBU units do not have to be installed prior to final plat approval. They can be installed after final plat approval as long as the locations are approved by the local post office.

If situations do occur where your department does not review some building projects, please direct any questions regarding mail delivery to the local Postmaster.

Thanks for your attention to our mail delivery options.

Mike Wyrwas Operations Programs Support

----Original Message----

From: Randy Fifrick [mailto:rfifrick@ravallicounty.mt.gov]

Sent: Tuesday, June 26, 2007 8:59 AM

To: Wyrwas, Mike - Billings, MT

Subject: Mail Delivery Options for New Subdivsions

Hi Mike,

I discussed our conversation on June 26th and your letter dated June 8th with the rest of the Planning Department. I just wanted to confirm that we are on the same page as to the mail delivery options for new subdivisions. Following is a list of items the Planning Department should request or require from developers:

1) Centralized Delivery should be required for subdivisions of eight or more lots, including commercial subdivisions.

2) Developers/owners should submit plans for Collection Box Units (CBUs), including the locations, to their local post office. Locations for centralized delivery installation should be approved by the US Postal Service.

3) The purchase of the Collection Box Units (CBU's) is the responsibility of the developer or owner. The units should be installed by the developer prior to final plat approval.

Please be advised that certain situations do not require subdivision review so the projects never come through the Planning Department. Multi-unit commercial buildings constructed on one lot (strip mall, etc) do not require subdivision review if the units are structurally attached and will be rented/lease (not sold as condominiums).

Thanks,

Randy Fifrick Ravalli County Assistant Planner 215 S 4th St, Suite F Hamilton, MT 59840 406-375-6530 rifrick@ravallicounty.mt.gov

#### RECEIVED

BIG SKY DISTRICT
GROWTH MANAGEMENT

JUN 1 3 2007

POSTAL SERVICE

Revalli County Planning Dept.

June 8, 2007

To:

County Planning Office

Subject:

Mail Delivery Options for New Subdivisions

The US Postal Service would like to partner with your county in preliminary planning for new subdivisions. We are looking for methods to ensure mail delivery is available to customers on day one of occupancy in a new development. We are asking for your help to make sure we have a consistent approach across the state. Developers have approached us suggesting that mail delivery plans/requirements be included with the original applications to the county for plat approval. We think this is a wonderful idea.

Would your county be able to incorporate the following US Postal Service requirements into your plat applications?

- Centralized Delivery is the method of delivery for all subdivisions and/or developments including commercial developments.
- Developers/owners should contact their local Post Office before making plans for the location of centralized delivery. Locations for Centralized Delivery installation are determined by the US Postal Service or by mutual agreement.
- The purchase of Collection Box Units (CBU's) is the responsibility of the developer or owner(s). A current list of authorized manufacturers is attached.
- The attached oulines concrete pad specifications for CBU placement.

We have had incredible success in other Montana counties by combining planning requirements into the initial plat applications and look forward to the continued success with your county. This process has made it much easier for developers, owners, and residents to quickly and easily obtain mail delivery.

Please contact me at 406-657-5710 or at the address below with any questions you may have in regards to new growth policies of the US Postal Service within our Big Sky District.

Sincerely,

Mike Wyrwas

Growth Management Coordinator

Big Sky District

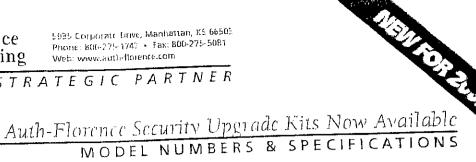
841 S 26<sup>111</sup> STREET
BILLINGS, MT 59101-9334
PHONE 406-657-5710
FAX: 406-657-5788
EMAIL MIKE.WYRWAS@USPS.GOV



#### Auth-Florence Manufacturing

5935 Corporate Linve, Manhattan, KS 66505 Phone: 806-271-1747 • Fax: 800-275-5081 Web: www.auth-florence.com

#### STRATEGIC PARTNER



## 250 vertical mailboxes

#### MOUNTING

Surface-mounted

#### DOOR SIZE

\* 16" H x 5-1/2" W

#### COMPARTMENT SIZE

• 16-1/2" H x 5" W x 6" D

#### STANDARD FINISHES

Anodized aluminum

#### LOCKS

5-pin cylinder locks with 2 keys

#### DOOR IDENTIFICATION

- Boxes must be identified from left to right in numerical or alphabetical order
- Tenant name card holder standard

#### **OPTIONAL FEATURES**

- Directory required in: installations with 15 or more mailboxes
- Doorbell pushbuttons
- Engraved doors

#### USPS APPROVED

 Auth-Florence Vertical Mailboxes are approved by the United States Postal Service to Standard 4B+





#### Vertical Mailbox Model Numbers

Number of Compartments	Model Number 12503HA	
3		
4	12504HA	
5	12505HA	
6	12506HA	
7	12507HA	

## 400/2600 horizontal mailboxes

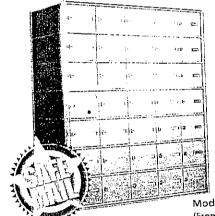
- Grouped in combinations of 5, 6 or 7 compartments high and 3, 4 or 5 compartments wide
- 5-pin cylinder cam lock with 2 keys
- Clear plastic number slots
- Anodizeo aluminum finish
- Recess-mounted only

#### OPTIONAL FEATURES

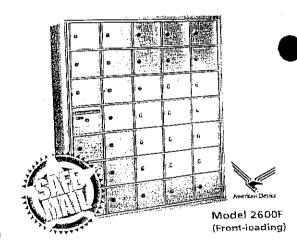
- Matching snap-on trim kit
- 5/8"-high engraved numbers with or without black fill numbers
- Engraved tabs for number slots

#### USPS APPROVED

 Auth-Florence Horizontal Mailboxes are approved by the United States Postal Service to Standard 4B+



Model 1400 (Front-loading)



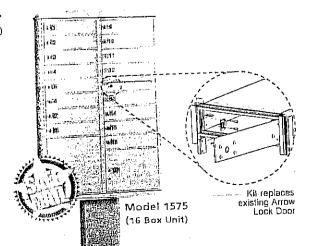
#### cluster box units (original 1118-E USPS Spec)

#### STANDARD FEATURES

- Units available in 8, 12, 13, or 16 mail compartment configurations, with 1 or 2 parcel lockers available
- 5-pin cylinder cam locks with 2 keys
- 15-1/2" deep compartments
- · Powder Coat Gray finish

#### HIGH LEVEL OF SECURITY

- 100" thick welded aluminum protective outer cabinet
- .125" .250" thick aluminum doors
- 5-pin cam locks with spring loaded covers



#### Security Upgrade Approval Status

USPS Approval	Number		
	1250		
	1400		
	1403		
	1575 (type I)		
	1575 (type II)		
<del></del>	1575 (type III)		
	1575 (type IV)		

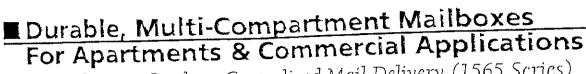






Auth-Florence Manufacturing 5935 Corporate Drive, Manhattan, K5 66503 Phone: 800-275-1747 • Fax: 800-275-5081 Web: www.auth-florence.com

A USPS STRATEGIC PARTNER



Auth-Florence Outdoor Centralized Mail Delivery (1565 Series)

2

AF is proud to announce its new High Security Cluster Box Unit. This centralized mail delivery system

greatly improves the security of personalized mail delivery.
For more info on Safe Mail products, visit

www.auth-florence.com.

NEW High Security CBU

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## PROVIDING THE HIGHEST LEVEL OF SECURITY:

- Thicker and stronger outer cabinet materials
- · Aircraft aluminum doors
- New USPS-1172 H5 910 customer locks with 3/16" stainless cam
- Stainless steel pedestal
- Robust parcel door hinge interlocking with master loading door frame
- Heavy duty fasteners
- 1/4" stainless steel hinge rod in all doors

#### SUPERIOR DURABILITY:

- Reinforced collection door
- Strengthened parcel and customer hook cam engagement
- Heavy duty master loading door hooks on both master loading doors

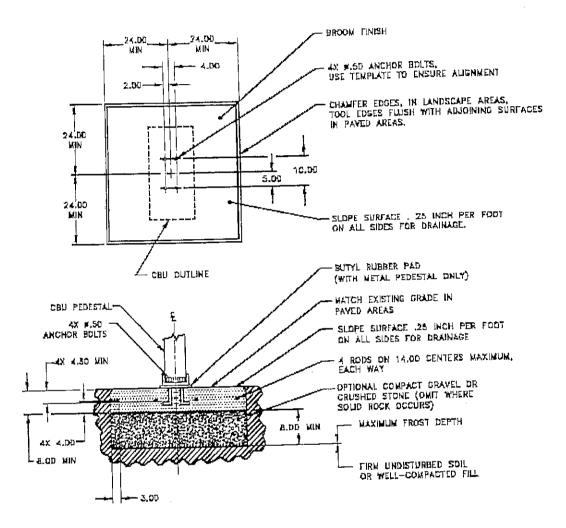
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Type III
16 Tenant
Compartments
2 Parcel Lockers





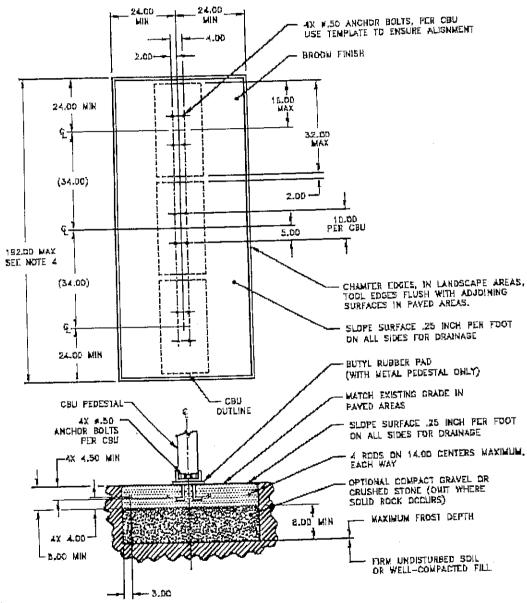




#### NOTES:

- 1. CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 3000 PSI 0 ZE DAYS, CONTAIN 4% MIN BX MAX AIR ENTRAINMENT AND BE FLACED WITH A 3.50 4.50 SLUMP IN ACCORDANCE WITH ACI 301.
- 2. REINFORCING STEEL RODS SHALL CONFORM TO ASTM A815, GRADE 8D.
- ANCHOR BOLIS SHALL CONFORM TO ASTM A193, GRADE BBM, TYPE 318 STAINLESS STEEL.

Single Unit Standard Base Detail



#### NOTES:

- CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 3DOD PSI to 28 DAYS, CONTAIN 4% MIN 6% MAX AIR ENTRAINMENT AND BE PLACED WITH A 3.50 4.50 SLOWP IN ACCORDANCE WITH ACI 301.
- 2. REINFORCING STEEL RODS SHALL CONFORM TO ASTM A815, GRADE BO.
- 3. ANCHOR BOLTS SHALL CONFORM TO ASTM A193, GRADE BBM, TYPE 316 STAINLESS STEEL
- 4. A 3 CBU CONFIGURATION IS DEPICTED. A 2 OR 4 CBU CONFIGURATION MAY BE USED AS LONG AS THEY ARE ARRANGED IN GROUPS SUCH THAT THE OVERALL DIMENSION OF THE CONCRETE BASE DOES NOT EXCEED 192 INCHES.

#### **EXHIBIT B-1**

#### Jennifer Degroot

From: F

Planning

Sent:

Tuesday, August 14, 2007 12:52 PM

To:

Jennifer Degroot

Subject: FW: Hamilton Heights, Block 13, Lots A-D

Ravalli County Planning Department 215-S. 4th-St., Suite F
Hamilton, MT 59840
Phone (406) 375-6530, Fax (406) 375-6531
planning@ravallicounty.mt.gov

From: Arlen & Karen Nelson [mailto:ozkaren@msn.com]

Sent: Tuesday, August 14, 2007 12:39 PM

To: Planning

Subject: Hamilton Heights, Block 13, Lots A-D

We are the property owners immediately east of the above proposed subdivision. As we are out of town, we would like to raise our concerns regarding it.

One of our questions is - we inquired about splitting our ten acres, and it could only be done once. Will they be allowed to have 20 plots on 40+ acres?

Our main concern is irrigation water, and availability for wells. We have had some problem getting adequate water from our well at various times. The irrigation ditch is too small to carry sufficient water for people using it now. How will it be large enough for 20 lots?

Our other concern is for the effect on wildlife and wildlife habitat. We moved to the Bitterroot for space - not subdivisions.

Please make a note of our concerns. Thank you.

Arlen A. Nelson Karen L. Nelson

#### EXHIBIT B-2

## Ravalli County Planning Board Screening Committee Minutes for May 30, 2007, 11:00 a.m.

Commissioners' Meeting Room, 215 S. 4th Street, Hamilton, Montana

#### **Public Meeting**

Hamilton Heights, Block 13, Lots A-D, Major Subdivision Stevi Flats, Major subdivision

This is a summary of the meeting, not a verbatim transcript. A CD of the audio recording may be purchased from the Planning Department for \$5.00.

#### 1. Call to order

Lee called the meeting to order at 11:15 a.m.

#### 2. Committee and Staff

(A) Committee members

Mary Lee Bailey (present) Lee Kierig (present)-chair Maura Murray (present)

(B) Staff

John Lavey Shaun Morrell Vanessa Perry

#### 3. Public Meeting

- (A) Hamilton Heights, Block 13, Lots A-D, Major Subdivision
  - (i) Vanessa summarized the staff memorandum regarding Hamilton Heights and stated that Planning staff recommended forwarding the application to the Board of County Commissioners (BCC). Mary Lee made a motion to forward the Hamilton Heights, Block 13, Lots A-D, Major Subdivision to the BCC without full Planning Board review based on the staff recommendation. Lee seconded the motion. The Committee voted 3-0 to approve the motion.
- (B) Stevi Flats, Major Subdivision
  - (i) **John** summarized the staff memorandum regarding Stevi Flats and stated that Planning staff recommended forwarding the application to the Board of County Commissioners (BCC). **Maura** made a motion to forward the Stevi Flats, Major Subdivision to the BCC without full Planning Board review based on the staff recommendation. **Mary Lee** seconded the motion. The Committee voted 3-0 to **approve** the motion.

#### 4. Other Business

- (A) Discussion on possible amendments to the Planning Board's subdivision review process
- (B) Approval of Minutes

**Maura** made a motion to approve the minutes from April 18, 2007. **Lee** seconded the motion. The Committee voted 3-0 to **approve** the motion.

- 5. Next Scheduled Meeting: TBA
- 6. Adjournment

Lee adjourned the meeting at 11:55am